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141
144
171

In support of this latter statement, I submit the following table comparing the Easter Islanders with other Polynesian groups:

Measurements:	Society[a]	Hawaii[b]	Samoa[c]	Tonga[d]	Marquesas[e]	Maori[f]	Easter Island
Stature (cm)	171.02	169.51	171.70	173.00	170.44	170.60	173.32
Head Length (mm)	190.35	187.85	190.60	191.00	193.20	196.50	199.09
Head Width (mm)	159.10	157.67	154.80	154.80	154.30	152.80	148.45
Minimum Frontal (mm)	103.00	107.85	103.40	104.80	102.70		101.50
Bizygomatic (mm)	145.10	144.50	145.90	143.50	142.90	145.70	141.32
Bigonial (mm)	109.60	111.18	104.60	104.80	108.10		107.41
Face Height (mm)	123.70	125.43	131.10	128.20	121.90	124.00	122.00
Nose Height (mm)	56.00	55.60	59.80	57.50	55.60	52.80	57.27
Nose Width (mm)	43.20	43.53	43.80	44.40	43.20	40.10	43.00
Indices:							
Cephalic	83.61	84.01	81.30	81.10	79.89	77.70	74.61
Fronto-parietal	64.98	68.44	66.80	67.60	66.60		68.39
Cephalo-facial	91.27	91.68	94.20	92.80	92.64	95.30	95.20
Zygo-frontal	71.03	74.73	70.90	73.10	71.92		71.84
Zygo-gonial	75.52	77.06	71.70	73.20	75.68		76.00
Facial	85.37	86.74	89.90	89.20	85.57	85.10	86.41
Nasal	77.35	78.41	73.60	77.60	77.84	75.90	75.36

[a] Series measured by H. L. Shapiro. See The physical characters of the Cook Islanders: Bishop Mus., Mem., vol. 12, no. 1, 1936.
[b] Wissler, Clark, Observations on Hawaiian somatology: Bishop Mus., Mem., vol. 9, no. 4, 1927.
[c] Series measured by Gordon Macgregor. See The physical characters of the Cook Islanders: Bishop Mus., Mem., vol. 12, no. 1, 1936.
Sullivan, L. R., A contribution to Samoan somatology: Bishop Mus., Mem., vol. 8, no. 2, 1921.
[d] Sullivan, L. R., Tongan somatology: Bishop Mus., Mem., vol. 8, no. 4, 1922.
[e] Buck, P. H. (Te Rangi Hiroa), Maori somatology: Polynesian Soc. Jour., vol. 31, no. 121, pp. 37-44; no. 123, pp. 145-153; no. 124, pp. 159-170; vol. 32, no. 125, pp. 21-28; no. 128, pp. 189-199.

It is evident from the above that the Easter Islanders fit into the Polynesian physical pattern, although in several traits, particularly in cephalic proportions, they occupy an extreme position. But if these deviations are considered from a geographic point of view an illuminating distributional pattern becomes apparent. (See Bishop Mus., Mem., vol. 12, no. 1, 1936.) In the following table I have arranged the head lengths and head breadths of a number of series, some as yet unpublished, in the order of their geographic distance from the Society Islands:

	Head Length	Head Width
Society	190.35	159.10
Tuamotus[a]	190.30	155.30
Tatakoto[a]	193.59	150.55
Marquesas	193.20	154.30
Mangareva[a]	195.95	152.67
Easter Island	199.09	148.45

[a] Unpublished data, collected by the author.

These means show that the head length increases and the head width decreases in proportion to the distance from the Society Islands and consequently in ratio to the possibility of influence from the Society group. Easter

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Island, being the most isolated, shows the least, if any, influence from the Society Islands on its cephalic dimensions. The transition to the Easter Island mean is closest through the Mangarevans who are likewise the most proximate geographically.

From these abbreviated and summary comparisons, the Easter Islanders emerge as a distinctly Polynesian group deviating significantly only in their cephalic dimensions. But this deviation appears to be demonstrably a survival of traits which have become progressively overlain and obliterated by influences emanating from the Society Islands. As I have suggested elsewhere, the Easter Islanders form part of an early and now marginal population in eastern Polynesia which was succeeded by the more recent brachycephalic Society Islanders. It is at present impossible to determine whether the extremity of the Easter Island position in cephalic range represents a survival of the original character of this early population from which the Mangarevans have been modified, or whether it constitutes an intensification of Mangarevan norms through selective migration followed by isolation and inbreeding.

From another point of view the association of Easter Island with Melanesian or Australian stocks, also, does violence to the known facts. Although much has yet to be discovered about the genetics of skin color and hair form, there is little doubt that the dark pigmentation of Melanesians and Australians and the frizzly hair of the former are traits which are often dominant in racial crossing and are never completely recessive. But even if they were, they would inevitably reveal themselves in some degree. However, the Easter Islanders bear no trace whatever of these distinctively Melanesian or Australian features. Nor do early descriptions give any suggestion of frizzly hair or dark skins. More than half the Easter Island males have an unexposed skin color corresponding to number 14 on the Von Luschan scale and exposed skin color equivalent to number 21. The 22 Easter Island males are distributed as follows:

Von Luschan Scale	Unexposed Skin	Exposed Skin
11	1	
12	2	
13	2	
14	10	
15	3	
16	2	2
17	1	
18		2
19		
20		2
21		12
22	1	2
23		
24		1
25		1

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764 177 Twenty years ago Routledge (194, p. 149) assisted in the interment of Angata, Pakomio's mother, who was put into a coffin and lowered into a grave in the Catholic cemetery. Curiously enough her prie-dieu was buried with her. Three English cheers added the only odd touch to the whole ceremony which was performed according to strictest Catholic custom. On the same day, a great feast of pigs was held, probably as a funeral banquet.

765 From the English Company I obtained an old photograph showing a group of girls, dressed in white, singing for the dead. My informant, Victoria Rapahango, told me later that the picture was taken at a feast held six months after the death of one of her children. The long period between the death and the feast suggests a survival of some old custom.

769 787 775 Offerings of food were made for the dead, but we do not know whether this was a general custom for all dead or only for those who asked for food through the medium of dreams or in the form of ghosts. Our only source of information is the following passage in a letter of Father Zumbohm (230, vol. 6, p. 120):

> As to the souls of the bad men, they stay near the corpses enduring hunger and thirst in proportion to their wickedness. From there they sometimes go to beg food from their relatives and friends who must give it if they wish to be rid of the importunity of the dead. I had many opportunities to fight against this superstition, especially among women who had been converted. Very often, as a consequence of a nightmare, they were induced to put food on the grave of a relative they believed they had seen in a dream.

765 262 The mourning of relatives lasts from one to two years (87, p. 30) or even three years, according to Routledge (194, p. 171). For only sons the mourning might have continued for three or four years. Relatives—we do not know exactly who—had to keep food tapus and were not allowed to eat sweet potatoes (87, p. 30). When the mourning was over a great feast was celebrated and the "pappa was finished" (194, p. 171).

Comparison with other Polynesian Funeral Rites

171 764 The wooden platforms on which the corpses were exposed resemble the Mangarevan biers described and figured by Beechey (15, vol. 1, p. 170). They are also similar to the Marquesan biers resting on four posts (142, p. 57). The stone platforms behind some Easter Island ahus have their equivalents in the Marquesas. On Hivaoa the platform for the dead was made of stream boulders, well fitted together and encasing rough stones, rubble, and earth (104, p. 117).

SUICIDE

762 152 Suicide is reported to have been very frequent before Christianity was introduced. For the "slightest provocation" natives jumped from a cliff (190, p. 464). Very likely the psychological background for these suicides was the same as in other parts of Polynesia, especially Mangareva, where it seems to

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have been most frequent among the chiefly women. Unfortunate love, spite, jealousy, and hurt vanity were probably the main causes of suicide. It is probable that suicide has not occurred recently as I do not remember having a single case mentioned to me by natives.

Concepts of Life after Death

There are two contradictory statements about the Easter Island beliefs concerning the after life. These may contain some truth but are probably superficial and inaccurate statements. The more ancient and the more reliable information is that of Roussel, who says (190, p. 495):

> After death the soul of a person went to a foreign country where the degree of his happiness depended upon the extent to which he had respected tapus during his life. If the soul was happy (well dressed) it remained forever in the new country. If it was unhappy (poorly dressed), it returned to harass its relatives.

Zumbohm (230, vol. 6, p. 120) expresses the same general idea, but adds that the souls of bad people stay near the corpses and suffer hunger and thirst in proportion to their wickedness. It has already been shown that the latter belief justified the food offerings put on the graves (p. 118).

This view of the future life is probably too ingenuous to be the true conception of the learned natives. Another version of the same problem, collected by Geiseler (87, p. 31) many years later, associates the destiny of souls with the god Makemake who kills and eats the souls of the wicked dead, while the souls of the good are allowed to rest on the island under his protection. The unburied dead can see Makemake when he comes for them and thus may escape him. Geiseler (87, p. 30) mistook the hen houses scattered about the island for sepulchers and made the erroneous statement that the dead of high rank were put into a stone house that had two holes through which their souls might escape when pursued by Makemake. Beliefs concerning ghosts and the uncanny appearance of souls of the dead have been dealt with elsewhere (pp. 318-320).

There is a belief, expressed in legends, that the souls of the departed were helpful to their relatives and sent them material favors. One father promised his son before his death that he would send him a tree, another foretold the coming of a turtle (p. 372). These gifts were exclusively destined to the persons designated by the dead man; if other people attempted to appropriate them the gifts were withdrawn. The same belief existed in the Tuamotus.

SOCIAL ORGANIZATION

Very little information on social organization can be found in the missionaries' accounts of Easter Island. This is not due to lack of interest but rather to the series of catastrophes which befell Easter Island immediately preceding the advent of the missionaries and which removed from the tribes their

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463 533 171 The *tangata rongorongo* of Easter Island is analogous to the *tuhuna o'ono* of the Marquesas who served as "master chanter, tribal bard, or ceremonial priest, who presided in all important ritual, and served as repository and teacher of sacred and traditional lore" (104, p. 145). He also taught the sacred chants and led the chanting at family feasts. There were chanting contests between the *tuhuna o'ono* of different tribes. The word *o'ono* is the equivalent of *rongo* since in the Marquesan dialect the *r* is dropped and the nasal velar (*ng*) becomes *n*.

On Mangareva there was a special class of chanters or "intellectuals" who were termed *rongórongo (taura rongorongo)*. They were responsible for the sacred chants for important festivals and recited genealogies and chants in praise of nobility at feasts organized by the king or by chiefs. They knew and transmitted to their pupils both sacred and profane lore—myths, legends, traditions, and historical narrative (28, p. 304).

Warriors

701 565 Thomson (215, p. 475) is mistaken when he assumes that "there was no class of professional fighters or soldiers; every able-bodied man was supposed to be a warrior and compelled to do duty in time of war." It is certainly true that most of the men of a tribe participated in a fight but the *matatoa* were nearly, if not exactly, professional warriors. As men of recognized courage and strength, they were expected to go to war and their presence in a battle was considered a guarantee of victory. Their prestige and the fear they inspired placed them in a special category above the average members of their tribes. They probably did no work. They might be compared [171] to the Marquesan war leaders, *matahoha* (courageous faces, 104, p. 126).

In the native texts two words are generally used to designate warriors—*matatoa* which applies to a man of military fame, and *paoa* which designates an ordinary soldier. *Paoa* also means "club" (the short club like the Maori *patupatu*). The expression *kai-tangata* or *paoa-kai-tangata* (cannibal-warriors) [171] appears occasionally in legends in reference to fierce fighters. The use of *kai-tangata* in this sense forms an exact parallel to the word *kaia* (famed warrior) of Mangareva.

Legends and missionary accounts fully agree that the *matatoa* were not only the leaders in war but were also the actual rulers of the tribes. Some of the *matatoa* seem to have procured for themselves privileges usually reserved for the *ariki*. On this point Roussel (190, p. 428) says: "The custom transmitted up to our time requires that the fishermen hand over the tuna fish he caught to the chief or, in his place, to the matatoa." Similar conditions existed on Mangaia where the temporal power passed from the *ariki* of the Nga-ariki tribe to victorious warriors (31, p. 122). On Easter Island there is no specific record that a *matatoa* ever ruled over the whole island, but cer-

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tain legends seem to indicate that some *matatoa* exercised, at least temporarily, supremacy over all the tribes.

Serfs

The *kio* were defeated people who were obliged to serve their conquerors or to pay tribute to them with the produce of their lands. Roussel translates *kio* to mean farmer or servant. On Mangareva a *kio* was a farmer who had put himself under the protection of a rich landowner or who cultivated a piece of land leased to him by some wealthy man. The *kio* were the lowest class of small farmers.

After a tribe had been defeated, those who were not killed and eaten were reduced to the condition of *kio*. Their sufferings and humiliation have been well described by Roussel (190, p. 424) whose information seems to have been obtained first-hand.

When a war was over, the defeated people were kept in caves which they could leave only during working hours. All became slaves and had to plant a certain portion of land for their respective masters. When these masters no longer needed the services of the *kio*, they sent them home under any pretext but really to have fewer people to feed and especially to make it necessary for them to plant all over again. If a dismissed slave forgot the oft-taught lesson and planted again what he needed for his family, he could expect to be robbed; resistance was useless because it would be paid for by renewed slavery or a new war. Therefore the released slaves planted only one tenth of what they needed for sustenance (p. 120), as they preferred to starve rather than to plant for someone else.

The tales and legends make frequent allusions to *kio* concealed in caves, pursued to the most uninhabitable parts of the land, and existing there miserably until they were allowed to return to their land or until the fortunes of war had been decided in their favor.

Secret Societies

The following Easter Island legend, if taken literally, seems to indicate the existence of secret societies and of masked persons organized into bands with the purpose of extorting food from the people:

> Six young men named Aamai went with a distant cousin Toka-ngutu, to make masks. They put the masks on and left Hanga-maihiku where they had been concealed, and went then to Hanga-o-honu. They arrived there at night and entered the houses, saying, "We are gods; we are the god Makemake." They behaved like gods and their voices were like that of a spirit. They said, "We want food, wooden images, dance paddles—all the things you have." When they finished with one house, they went to another, and were again given food and other things from the people there. The seven men left Hango-o-honu loaded with goods and returned to Hanga-mai-hiku where they spent a few days. At night they changed their voices to sound like gods. Men, women and children were terrified and believed they were really gods and gave them food, chickens, wooden images, and all sorts of other things.

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575 The young Aamai and their cousin went to other places also—to Hanga-roa, Mataveri, Vinapu, Ahu Akapu, Tahai, Vai-mata and Ahu-te-peu. They always went at night and were given crayfish, fish, tuna, and eels. The people were afraid and thought that they were really gods.

One day they came to the house of Hipa where they received food. The men who were carrying the food to the Aamai came to a place called Vai-hoata. The Aamai said, "Return to your houses." The men made as if they were leaving, but they concealed themselves. The Aamai took a bath in a well and talked with their natural voices. Then they took the extorted goods on their backs and went on. The men watching them said, "They are not gods but men." When the Aamai had gone, the carriers returned home and told what they had seen. The people said, "Go back and kill these young men. They are not gods, but men who imitate the voice of the gods." The news spread everywhere. That night the Aamai did not return, but Toka-gnutu went alone in the night, wearing his mask. Men were waiting for him. When he entered the house he was seized and killed. The men who had killed him said, "They were just men, they were deceiving us." But all except Toka-gnutu escaped from them.

575 171 Those who advocate a Melanesian origin for the Easter Island culture might use this legend as a strong argument in favor of a possible connection between the Melanesian secret societies of masked people who begged food and terrified the uninitiated and a similar institution on Easter Island which is recorded only in the above tale. However, masks are termed *manu uru*, the term used for tapa kites and tapa images. Tepano is the only informant who claimed that masks were an ancient culture trait, but it must be remembered that Tepano spent many years in Chile where he had opportunities to see masquerades. There is little doubt that the element of the masks is an addition made by Tepano. In the text stress is put on the fact that the young men imitated the voice of the gods, and those spying on them recognized them as human when they spoke in a natural voice. A shortened version of this legend by Routledge (194, p. 224) twenty years ago does not refer to masks but to painting. The fraud was detected when the men were surprised washing their faces in a well. My version mentions the washing which is a meaningless detail if we do not know that they were painted.

SALUTATIONS

201 The well-known Polynesian salutation of pressing noses has never been recorded for Easter Island but must have existed, as we find the word *hongi* (to press noses) still in use with the modern meanings "to smell" and "to kiss." I observed women sniffing their children to manifest their tenderness.

152 Easter Islanders wept when they met friends or relatives from whom they had been separated for a long time. This is related to the widespread Polynesian custom of weeping for those who have died during separation. The word *tangi* (to weep) is used in Easter Island tales in which people meet. I noticed that Easter Islanders, like other Polynesians, were inclined to weep over articles which reminded them of a dead relative. A woman asked me for her father's photograph which had been published in the report of a

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white men. However, no early visitor mentions the arrowroot and it is not cultivated today. It may have been replaced by manioc.

Coconut

In the second part of the nineteenth century, some coconut trees or simply some coconuts (*niu, makoi*) were brought to the island either by Easter Islanders returning from Tahiti or by missionaries. This explains why Palmer (171, p. 170) saw large coconut bowls, although he was unable to find any coconut trees. It is probably to that attempt at coconut cultivation that Tepano alluded when he told me that in his mother's time there were some coconut trees at Poike, near Maunga Teatea. They are purported to have been destroyed during the war between the Miru and the Tupa-hotu. Tepano affirms having seen ancient boxes made from coconuts. The two trees now growing on the island were planted by Salmon.

Foreign Plants

Plants of European or American origin, now cultivated on Easter Island, are peas (*pipi*), beans (*ariko*), melons (*melone*), watermelons (*santia*), onions (*onioni*), manioc (*manioko*), maize (*tarake*), pepper (*oporo*), and pineapple (*anana*). Fig trees (*pika*) and mulberries (*monamona*) are abundant but the natives care little for their fruits.

The island soil is particularly favorable for beans and though the islanders complain that potatoes do not thrive, those of the English resident are the best I have tasted anywhere. The Williamson and Balfour Company is trying to develop the cultivation of maize by the natives, who have prospects of selling it at good prices, but few islanders have taken advantage of the opportunity.

Comparison with Cultivated Plants on other Polynesian Islands

The plants introduced and cultivated on Easter Island in early days are all Polynesian species. Due to the cold climate there are no breadfruit trees on the island and the two coconut trees do not bear fruit. In this respect Easter Island resembles Rapa where, because of the cold, there are no breadfruits, coconuts, and probably no pandanus.

Easter Island has no kava though kava was consumed on Mangareva and in the Marquesas whence the Easter Islanders probably came. Perhaps the Easter Island climate is unfavorable. The name kava is used on Easter Island in the composite form *kavakava atua*, designating a fern. Kava is also absent on Rapa though the climate there is suitable for its growth.

In the Marquesas as on Easter Island sugar cane and paper mulberry were cultivated in enclosures (104, p. 67).

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they do not appear in extensive collections made in the last 20 years of the nineteenth century. The very form of these curios suggests a recent origin. In the Young collection of Bishop Museum there is a piece of wood (B3625) terminating in the head of an eel which appears to me to be the prototype of modern wooden swords. This specimen, called *puhi* and classified as a wooden club, is also flattened, has blunt edges, and is curved like a boomerang. Its rough workmanship denotes recent origin.

Comparison with other Polynesian Weapons

An obsidian point found in the Yodda Valley in the northern division of British New Guinea (200) resembles in shape the Easter Island *mataa*.

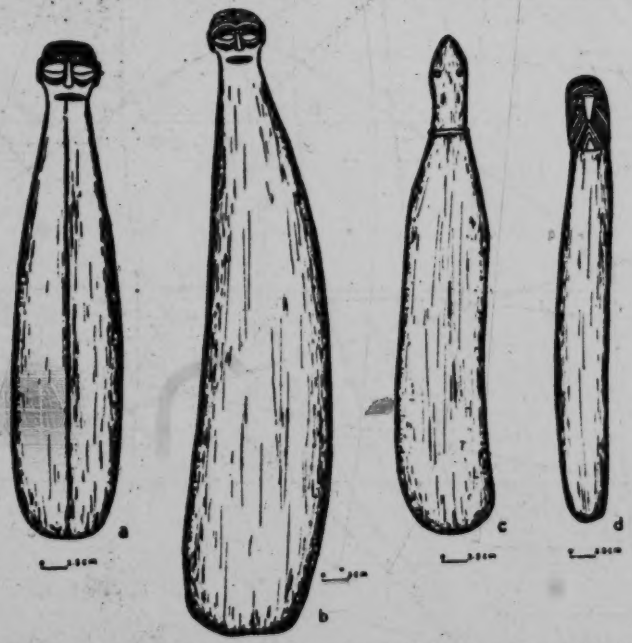

Figure 6.—Short-handled clubs (*paoa*): *a*, length 525 mm., greatest width 113 mm., head similar to that on *ua*, front surface of blade has median longitudinal ridge (B3619); *b*, length 623 mm., greatest width 114 mm. (B3618); *c*, length 530 mm., greatest width 103 mm., length of handle 110 mm., handle carved in lizard head, eyes made of ring of bone and obsidian inlaid in wood, one longitudinal edge and end blunt, one edge rounded (B3701); *d*, length 492 mm., greatest width 58 mm., length of handle 86 mm., probably modern curio, may have been used to beat fish to death, one side of handle carved in image, other side in rough human face and oblique lines, eyes protruding, nose indicated by long depression (B3702).

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Another obsidian point, brought back from New Guinea by Finsch, is considered by Seligman to be a relic of the period when the ancestors of the Polynesians were passing through Melanesia to reach their homes in the eastern Pacific. Unless the Polynesians, or, as Balfour (9, p. 357) believes, the Melanesians traveled directly from New Guinea to Easter Island without stopping, the relationship between New Guinea and Easter Island spear points is purely fortuitous. In the intermediate area there is no obsidian and no record of spear points. Even if obsidian points were originally common to all Polynesian cultures it is not likely that the technique of making them would have been perpetuated by several generations living on islands where there is no obsidian. The Easter Islanders must have "instinctively" resorted to the original pattern developed in their home country. This is hard to believe.

The Moriori call both the flint and their stone knives by the name *mata*. Their knives are tanged (206, pl. 26) and vaguely resemble some of the Easter Island spear points, especially those of type 6. In New Zealand *mata* means flint as well as obsidian; the Maoris used obsidian flakes as knives.

The Easter Island *ua* or baton of office resembles the famous Maori *taiaha* (flat club). Both have a thin, flattened lower end with a sharp edge. The upper end of the *taiaha* terminates in a flat point which is in the shape of a tongue and protrudes from a grotesque head. The position of the carved head of the *taiaha* is the reverse of that of the Easter Island *ua*, and does not favor a parallel between the two. The blade of the Marquesan chief's staff is a little narrower than that of the Easter Island flat club, and the handle is not carved. It is enclosed in a sleeve of coconut fiber and terminates in a pompon of human hair (142, p. 393). As noted by Linton (142, p. 396), the distribution of the narrow-bladed staff in Polynesia is limited to the Marquesas, New Zealand, and Easter Island.

The close resemblance between Easter Island short clubs (*paoa*) and New Zealand *mere* or *patu* was noted by Captain Cook (53, vol. 1, p. 291), by G. Forster (83, vol. 1, p. 536), and by later observers. Skinner (207) says that all the varieties of Easter Island clubs have corresponding varieties in New Zealand and the Chatham Islands. The Easter Island *paoa* certainly belongs to the same type as the Maori *patu*. However, the analogy is imperfect, as no stone clubs have been found on Easter Island and there is no tradition about their existence. The Maori *mere* of the *patu onewa* type were made of stone (20, vol. 2, p. 267). Maori wooden clubs were fiddle-shaped or curved at the top like an English bill hook (20, vol. 2, p. 265), two types entirely foreign to Easter Island. The stone *patu*, which are the closest to Easter Island specimens, lack the poll decorated with a head. This peculiarity belongs to the wooden or bone *patu* which are the most different from the Easter Island types. The Easter Island *paoa* lack the suspension hole found

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411 171 in most Maori specimens. The ridging at the poll on some Easter Island clubs is the usual conventionalized representation of hair, characteristic also of wooden images. Hence the similarity to the transverse grooves on the poll of the Maori *patu* is purely accidental.

FISHING

226 It is impossible to get even an approximate idea of the importance of fishing in pre-missionary times. Fishhooks are found in great abundance in caves, carved fish are common in petroglyphs, and fishing episodes are numerous in folklore. But Eyraud (81, vol. 38, p. 126) states that fish had an [262] insignificant place in the native diet and was considered a great delicacy. At the present time fishermen are few and go out only occasionally. Charli Teao is the only native I know for whom fishing has a special attraction and who derives benefits from this activity. While the *Mercator* was anchored in Hanga-roa Bay he supplied us with tuna which he traded for bread. Deep-sea fishing cannot be maintained on a profitable basis for there are only two boats on the island. Probably the lack of wood for building boats prevented extensive fishing in ancient times.

Numerous causes have contributed to the decline of fishing. The natives have had an ample supply of meat since the introduction of cattle and sheep. Moreover they have free access to only a small part of the coast. If they wish [423] to fish on the north or south coasts, where the coves and low shore are particularly favorable, they must obtain written permission from the Williamson and Balfour Company, and many natives are too shy to ask for it. Easter Island has no protecting coral reef, and in winter months the sea is too rough for the canoes to go far offshore. The fishing season begins at the end of October. The fishing near the island is not good. Ever since Captain Cook's time men have complained of the scarcity of fish.

136 Fish are said to be most abundant between the islets of Motu-kaokao and Motu-nui. A stone image called Pou-haka-nononga of the Ahu-anakoiroroa 226 was a landmark used by fishermen to find an area in the sea called Haka-no-nonga where tuna were plentiful. Other places in the deep sea which were [532] traditionally favorable for fishing (*kona-ika-nui*) had proper names. Tuna were caught at points off the coast called Hatehate and Mitiake; the best area for the *ature* fish was at Haka-kainga and for *mahore* fish at Tuaniu. Shore fishing was mostly a feminine occupation, and according to legends was once practiced on a wide scale.

226 Fishermen were called *rava-ika*; expert fishermen were *maori* or *rava-ika-maa* (fishermen-with-knowledge). Canoe fishing was indulged in even by the king (p. 132). Geiseler (87, p. 37) noticed that next to weapons, fishing implements were the most valued artifacts.

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227 321 The shank ends in a backward-projecting knob which prevents the snood from sliding off. In a few specimens the end of the shank is sharp, the knob small and inconspicuous. Small notches on the back of the shank, under the knob, help secure the snood, especially when the knob is small or missing.

The one-piece fishhooks are usually small; I obtained some specimens only 17 mm. long. The largest one-piece fishhooks picked up in caves are rarely more than 80 mm. long; most of them are about 60 mm. long (fig. 9, *a*). Modern specimens, which are numerous in Bishop Museum collections, are longer and thicker (fig. 9, *g*).

Composite Hooks

227 Parts of composite hooks (*mangai verevere*) are frequently found by the natives in old caves (fig. 11, *d-e*). After a few days on Easter Island I had made a fairly good collection of shanks (*reke*) and points (*kainga*), but it was less easy to obtain a complete composite hook.

In the Bishop Museum there are two complete composite hooks. The larger (fig. 11, *a*) has an ancient, finely made, stone point attached to a modern wooden shank by stout cotton thread. The shape and proportions of shank are probably correct, as well as the method of binding. The proximal end of the shank is shaped like the corresponding part in the one-piece stone hook. The distal end has a groove at the back corresponding to the groove on the front of the stone point. Composite hooks of stone must have been rare; I know of only one and have been able to discover no fragment of stone which could be considered an element of a composite hook. Nevertheless there is no doubt as to the genuineness of the specimen. The smaller composite hook (fig. 11, *b*) has both shank and point of bone. The point is made of the human tibia, the shank suggests the human femur. The fine cord binding point to shank is of local manufacture. The lashing is too tight to be genuine, but it must have been somewhat similar in the old specimens. The string was wound first transversely, then vertically, again transversely, and once more vertically. The lashing conceals entirely the juncture of shank and point. The point base is wider than the limb; its inner edge is slanting and fits into a groove in the base of the shank. The distal end of the point base protrudes in a knob which facilitates the lashing. The distal end of the shank has a recess or a groove and sometimes a knob corresponding to the knob at the proximal end. The broken shank of a composite hook I found in a cave has a projecting barb similar to those of barbed single-piece hooks (fig. 9, *h-j*).

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The composite fishhooks of the Fuller collection, reconstructed by the natives (14, pl. 93), bear hackles of horsehair. On other Polynesian islands, tufts of hair, representing the tail or fin of a fish, are added to the hooks to give more efficiency to the lure. If the device was not traditional in Easter Island, it may have resulted from contact with Tahitians. Charli Teao, the best fisherman on the island, told me that formerly the shank and the point were lashed with women's hair. His statement may be based on a vague reminiscence of the presence of a hackle of hair.

The lashing on a composite fishhook in the British Museum is covered with a piece of tapa. The lashing at the base of the hook in a specimen owned by Beasley (14, pl. 95) is made of strips of the outer bark of some plant.

Comparisons with other Polynesian Fishhooks

227 171 Bone and stone were apparently the only materials used for fishhooks on Easter Island. A wooden fishhook of *toro-miro* wood was made for me, but

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it is so like the ordinary bone hooks that I consider it simply an imitation without ethnological significance. There is no indication of wooden hooks though they may have been known. Simple, one-piece, curved hooks are universal in eastern and central Polynesia and are so similar that significant differences can be noticed only in secondary features. With a few exceptions, Easter Island simple hooks are barbless. When the barb is present, it projects from the inner side of the shank. Only one hook in my collection has a barb on the point (fig. 9, *j*). A New Zealand hook of similar type is figured by Beasley (14, pl. 13). In other New Zealand bone hooks, the head of the shank has a projection cut almost as sharply as the ordinary barb of the point. The jade hooks (*hei matau*) of New Zealand are mere ornaments and cannot be compared to hooks that were actually used.

FIGURE 11.—Composite fishhooks (*a-b*, B3531; *c-e*, Trocadero Mus.): *a*, modern wood shank, stone point, point 65 mm. long, 12 mm. thick, recess on lower part of point 10 mm. wide; *b*, bone hook, longitudinal groove on top of knob, modern lashing of 2-ply *hau* bark thread, shank at bulge 11 mm. thick, total length of hook 50 mm., point markedly curved backward, point 7 mm. thick; *c*, bone hook, projecting knobs on distal end of shank and on point base give concave base to hook which must have allowed tighter lashing, modern lashing, total length of hook 56 mm., maximum width of point 10 mm.; *d*, bone shank limb of fusiform shape, 33 mm. long, 11 mm. thick at bulge; *e*, bone point, base flat with sharp edge, 40 mm. long.

Easter Island stone fishhooks have no parallel in other parts of Polynesia, with the possible exception of Pitcairn Island. A stone hook, in the Otago Museum (D.34.1006), New Zealand, is said to have been found on Pitcairn, though no other stone fishhook or fragment has been reported there. This hook is so like modern stone hooks from Easter Island that some doubt exists as to its origin.

The shape of the upper part of the shank of Easter Island hooks is determined by the lashing of the snood and is found on many broad hooks, especially those from Hawaii. The same feature appears in Moriori (206,

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p. 82) and Maori fishhooks. The Mangarevan shanks have the same outline though the back projection is more accentuated than those from Easter Island.

Though Polynesian bonito hooks, like Easter Island composite hooks, are made of two pieces lashed together, they have no other character in common. The Easter Island composite hooks fulfilled the need for larger hooks better than the one-piece bone hooks, and their manufacture was no doubt easier than the painstaking drilling of bone plates.

The composite hooks of Easter Island may be divided into two classes: those with straight, cylindrical shanks and those with shanks slightly convex on the outer side. The straight shank has some similarity to two New Zealand composite hooks of moa bone figured by Beasley (14, pl. 11), but the New Zealand hooks have a projection near the top which is lacking in the Easter Island hooks. The slightly convex shank is like a Hawaiian type (14, p. 50). The broken shank of an Easter Island composite hook has a projecting barb on the inner side, a feature of the Hawaiian composite hook.

The point bases in Easter Island and Hawaiian hooks have exactly the same peculiar downward projection and are fitted in the same way (fig. 11, *e*). The methods of lashing are strikingly similar. The New Zealand composite hooks were provided with hackles like the Easter Island ones.

LASHING OF SNOOD

Many of the old hooks in public or private collections are provided with a snood (*kavei*). It is difficult to tell whether these snoods are really of old native make, but they probably represent an ancient method.

Small fishhooks examined by Dr. P. H. Buck in the Museum für Völkerkunde, Vienna (22821-22824), have a lashing of simple transverse turns with a couple of half hitches. Chauvet (45, fig. 73) figures a very old composite bone fishhook from Easter Island, the snood of which seems to be wrapped by a strip of bark of the same kind as that on the hook described by Beasley (14, pl. 95, p. 57). The snoods of the two small fishhooks (*piko*) in the Bishop Museum collection are wrapped with a very fine strip of what seems to be tapa cloth or paper mulberry bark.

LINE AND ROD

Fishline (*hau*) was made of *hau* (*Triumfetta semitriloba*) bark. Poles are used now for fishing on shore and were known in olden times, to judge from the term in Roussel's vocabulary, *ika kohau* (to fish with a line: *kohau*, stick or pole).

BAIT

To catch tuna (*kahi*), small *ature* fish were used as bait (*mounu*). The *ature*, which is the size of a sardine, was probably split and fixed to the hook

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227 end of a rope. The average dimensions of the net were 1½ feet deep and about 1 foot wide.

A net without frame in the Museum für Völkerkunde, Berlin (VI.4965) seems to be a bag net. It is 160 cm. deep, 146 cm. wide at the mouth, and 196 cm. wide at the bottom. The meshes are unusually wide (4 cm.). The catalog states that this net was used on the open sea, which is contrary to the customary use of the dip net.

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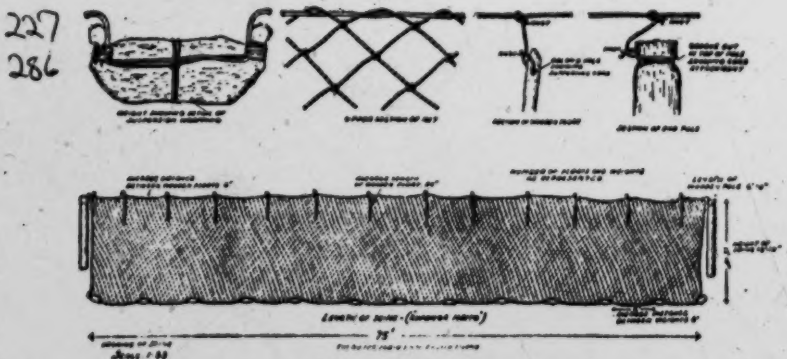

FIGURE 12A.—Seine net (*kupenga maito*) collected by Thomson in 1886 (Nat. Mus. Washington, 129748).

SET NETS AND SEINES

227 The *kupenga tuku* or *tukurua* net was used at night in coves. It is said to have been 10 meters long. It was attached to two poles and was carried to the water by six men, three on each side. The poles were set up in the sand, and the shoal of fish was driven into the net, which had considerable bag.

[171] From this description it appears that the ancient *kupenga tuku* of Easter Island was identical with the present *tuturua* net of the Cook Islands (33, p. 294), where the name means "net with two poles (*tutu*)." This is probably the real significance of the term *tuturua*, though today the word designates a net without poles.

The modern *kupenga tukurua* of Easter Island has no poles, measures 4 to 5 meters long, and has meshes about 2 or 3 cm. wide. A string runs along the upper and the lower edges. Natives use this net to fish in coves along the shore. Two men carry the net, one on each side, and walk in the water slowly and quietly until they are near a shoal of fish—usually *kotote*, a fish about 15 cm. long. As they near the fish, one of the men throws a stone beyond the fish to drive them toward the net. Then one man lifts the lower edge of the net to meet the upper, thus imprisoning the fish. This type of net might have been named after the ancient *kupenga tukurua* with two poles.

In the Cook Islands *maito* fish are caught with the *kupenga tuturua*; on Easter Island they were caught with a special net called *kupenga maito*, which was similar to the *kupenga tuku* or *tukurua*, but was provided with floats and sinkers. A specimen of *kupenga maito* was procured by Thomson in 1886 and is preserved in the U. S. National Museum in Washington, where I examined it (fig. 12A). The netting is made of paper mulberry fibers twisted into a thin string. The knots forming the meshes (3 to 4 inches wide) belong to the type known as "weaver knot", common in Polynesia (fig. 12, *c*). The

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227 324 stones might have been line sinkers. However, the frequency with which such pieces are discovered in fishermen's caves along the shore suggests that they had something to do with fishing, either as line sinkers or net sinkers. The lightness of these stone sinkers cannot be regarded as a serious argument against their practical use.

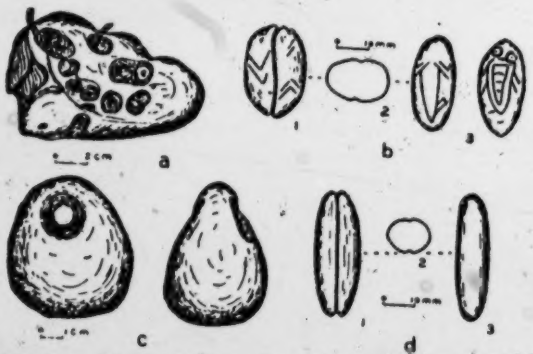

FIGURE 13.—Stone fishnet sinkers: *a*, stone with natural hole used as sinker, 141 mm. long, weight 33 oz. (B3513); *b*, small stone sinker for net or line: 1, lateral view; 2, cross section, 3, front and back views showing incised animal figure, probably a fish or a lizard, 28 mm. long, 20 mm. wide, weight 2/3 oz. (B3557); *c*, biconical hole perforated near top, coarse-grained basalt, 70 mm. high, greatest width 61 mm., 51 mm. thick, weight 10 oz. (B3564); *d*, small stone sinker for net or line: 1, lateral view; 2, cross section; 3, front view, 38 mm. long, 14 mm. wide, weight 1/2 oz. (B3557).

COMPARISON WITH OTHER POLYNESIAN FISHNETS

227 171 A comparative analysis of Easter Island nets is almost impossible. With few exceptions they are known only through second-hand descriptions. Also the types of nets have been studied in only a few Polynesian islands, and many of the descriptions are too general to be utilized for comparative purposes.

Scoop nets are general in Polynesia, but nowhere did I find reference to the bow-shaped frame of Easter Island.

Bag nets were used in New Zealand for catching crayfish, and, as on Easter Island, the bait was attached above the hoop. Grooved stones were used as sinkers on these Maori nets. The sinkers were sometimes enclosed in a small net to prevent their being lost. The large bag nets of Easter Island (*kupenga ature* or *koreva*) probably resembled the Maori bag nets for catching *maomao* (32, pp. 626-634). Bag nets have been described for the Marquesas (142, p. 400), the Society Islands (103, p. 88), Manihiki and Rakahanga (29, p. 163), and Tongareva (30, p. 201). In the Bishop Museum collection there is a large bag net from Hawaii which suggests Easter Island *kupenga ature* nets.

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To catch needle fish (*ihe*) the Marquesans had a special net of the same type as that used for flying fish. It was a small bag fixed to the arms of a fork lashed to a pole (142, p. 400). It is possible that the description of the *kupenga ihe* given by my informant is inaccurate and that the Easter Island *kupenga ihe* was like the Marquesan. However, in the Tuamotus the needle fish are caught in traps, hence we may assume that set nets could be used for the same purpose.

Fish Spears

Spears used by modern natives are of European manufacture. It is impossible to determine whether a spear is old or has been introduced by Tahitian settlers. When Roussel (190, p. 355) landed on Easter Island in 1866, some of the natives were armed with European harpoons. Modern spears are from 3 to 5 meters long and belong to two types, one a simple spear with an iron point, the other with a compound point working on the principle of a fish gorge. The fisherman dives, his eyes protected by glasses, and pierces fish that swim within his reach.

Turtle Watchtowers

Turtles were watched for from turtle watchtowers (*tupa*) along the shore near ancient settlements.

One tower at La Pérouse Bay (pl. 2, *B*) is 3 meters high and the diameter of its base is about 7 meters. The entrance is 80 cm. high and 1.10 meters broad. The interior of the building consists of big, unhewn stones, well laid. Inside they project gradually until they are spanned by slabs forming a crude corbeled vault. The largest tower is situated between La Pérouse and ahu Mahatua, near ahu Vai-mangeo. The tower has a kind of wing containing an inner chamber.

The *tupa* of ahu Akapu, seen by Cook and his party (83, vol. 1, p. 570) and accurately described by Bernizet (130, vol. 2, p. 254), is still in fairly good condition. Its construction is similar to that of the tower at La Pérouse. The interior chamber is 24 feet long by 6 feet wide and 7 feet high in the center. The walls are 4 feet thick and the door is 2 feet high by 2 feet wide.

Thomson (215, p. 484) and Routledge (194, p. 218) were told that these towers were lookout stations whence the movements of turtles and fish could be watched, and I was given the same explanation. Skottsberg (208, vol. 1, p. 12) was puzzled by the importance of the towers with their lower apartments, which are in no reasonable proportion to the purpose for which they were built. Though they are along the shore, these towers do not give the watchers any better view of the sea than any near-by hill. There are no such towers on the south coast; on the north they are few—I know of only five. In the Tuamotus and Hawaii, watchers sat at certain points along the coast to signal the arrival of turtles or fish. Heaps of stones served as elevations. The *tupa* of Easter Island were probably most similar to the Hawaiian fishermen's shrines (*ko'a*), which were terraces of stone. On some of them stood

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has to pass its head through the noose. The noose is closed by pulling the string which the fisherman holds in the same hand as the baited stick. 226

One such snare (fig. 14, *b*) in the Museum für Völkerkunde, Berlin, (VI.4880) is much more elaborate than the present-day specimen. The bait stick is provided at its thicker end with a notched stone, the function of which is not clear; the rope is first tied around the thinner end, then runs along the stick, and is caught in the lashing and passes through a hole. The free end of the rope is used to tie the bait to the stick. 227

Eel snares of the same type as those of Easter Island were used in Rapa (212). In the Marquesas the snare consisted of one stick, which was held in one hand while the string was held in the other (104, p. 177). The eel snare is widespread in the Tuamotus and probably in the Society Islands, though it is not mentioned by Handy (103). In Samoa the eel snare is practically identical to that of Easter Island (34, p. 421). 227 171

Fishing by Hand

Octopus

Octopuses (*heke-puka*, octopus with short legs; *heke-korotea*, octopus with long legs) are caught with bare hands (*hakapari*) along the shore by moonlight. The fisherman bites the head of the octopus to kill it. Tradition states that formerly the natives built *hare heke*, houses where the octopuses sought shelter. They were driven into these shelters by magic. 226

Crayfish

Crayfish (*ura*, *ura raperape*) were formerly caught in a bag net, but that method has been discarded; now they are captured by hand either by day or by night. The fisherman dives (*ruku*) where he knows there are recesses or small caves. He seizes the crayfish by the body (*ipu*). At night crayfish are caught by the light of torches (*tuu ahi*) made with a rag soaked in sheep fat and fixed to the end of a stick. Formerly the natives used torches made of banana bark impregnated with fish fat. Fishing with torches is called *ika puhi*. Crayfish hunters always go by twos. The man holding the torch puts his foot on the crayfish, attracted by the light, and his companion picks it up and puts it into a bag. The most favorable time for catching crayfish is when the wind is new (*tokerau hoou*), that is, when the wind turns and pushes the crayfish toward the shore. At Puhinga on the south coast crayfish are especially abundant.

Reef Fishing

Reef fishing (*hahari*) and the gathering of shellfish were important activities of women in olden days. The women used small spears called *ruruki* for [227] some kinds of fish or to remove shells from the rocks. Fish caught thus by women were *paroko*, *patuki*, *tuamingo*, *rae-mea*, and *mahaki*. Crabs were not [262] despised then as they are today. The natives distinguished between the kinds

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Judging from the holes in the curbs, rafters were numerous; if they all joined a main post the interior of the house must have been rather obstructed by them. The rafters were connected by purlins "reaching along the whole length at two feet distance from each other." They gave strength to the whole structure and supported the thatching. 342

To build a house is *hato*, the term used in other parts of Polynesia for thatching. The Easter Island vocabularies give *hakamanga* for roof. The end of the house was called *pini*. The central ridgepost is said to have had magic in it, though present natives are unable to tell how it was manifest. The different elements of the frame were lashed together with ropes of *hau* bark (*hahau*) and great care was taken that the number of knots used in lashing should be odd, for fear of the bad luck connected with even figures. [80] [177]

On Easter Island, wood was a precious and rare material, so when a house had to be abandoned because of fleas, "it was lifted by a dozen men who carried it to another spot, fastening it with poles stuck into the ground" (230, vol. 6, p. 122). 342 483

Thatching

Roggeveen (186, p. 118) describes the thatching of houses in the following terms: 342

> . . . Then the interstices, which are all of oblong shape, are closed up and covered over with a sort of rush or long grass, which they put on very thickly, layer upon layer, and fasten on the inner side with lashing . . . so that they are always as well shut in against wind and rain as those who live beneath thatched roofs in Holland.

According to Tepano, who saw houses of ancient type in his youth, the thatch (*hatunga*) was made of three superimposed layers:

The first was a covering of mats (*moenga*); the second, a layer of sugar-cane leaves (*rau-tou*); the third, a layer of grass (*mauku-ato*). The mats extended on the frame were similar to sleeping mats and were made of rushes (*Scirpus riparius*) sewn together with *hau* cords. The accuracy of this statement is borne out by Bernizet (130, vol. 2, p. 256): "The whole [structure] is covered with rushes of nine or ten lines diameter at the lower end, united together like mats, by threads twisted with the hand." The use of sugar cane is mentioned by G. Forster (83, vol. 1, p. 570), who describes the thatching as composed of "small sticks [purlins], and covered with a neat mat-work of sugar cane leaves, leaned on each row of stakes, forming a very sharp ridge or angle at the top and resting firmly on the ground at the bottom." The word "mat-work" may suggest that the Easter Islanders employed for thatching a method widely known in the rest of Polynesia (Cook Islands, Tahiti, Samoa, etc.) which consisted in covering the house with sheets made by doubling pandanus or sugar-cane leaves over a length of cane and sewing them together with a slender rod or coconut midrib. The threading of the midribs through the leaves is termed *tui* on Mangareva; and the verb *tuitui* means, on Easter Island, to "tie together, bind together." The number of purlins used in the framework is more appropriate for lashing of bundles of leaves and of grass than for the simple covering of sugar-cane sheets. Geiseler (87, p. 39), who did not see houses of the old type but describes them from information received, says that the frame was of *toro-miro* wood and that the intervals between the elements "were interwoven" with dry banana leaves (which he erroneously calls *hau*), then covered with sugar-cane stalks and leaves, and finally with long grass. Zumbohm (230, vol. 6, p. 122) likewise states that the huts were thickly covered with reed, sugar-cane stalks, or other grass so that the rain could not percolate into the interior. Neither description refers to sheets or mats, nor do they stress any differences in the way these layers were put on. My informant asserted that [171]

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Household Furniture

The furniture in the ancient huts was extremely scanty, consisting of mats spread on the floor, stone pillows (*ngarua*), calabashes for water (fig. 15, *d*), baskets for food, and wooden images or tablets hanging from the thatching. Mats (*moenga*) were made of reed (pl. 2, *C*) and the fine specimens were highly valued. In modern houses, people who have no matress sleep on layers of grass, called *heriki* when used for this purpose. Their ancestors are said to have covered themselves with grass. The square stone pillows (fig. 15, *c*) were often decorated with straight lines or with the stylized representation of the vulva. Such pillows were not used elsewhere in Polynesia where wood was abundant. A single specimen of a carved stone pillow has been found in Hawaii (25, p. 125, fig. 102).

Community Houses

Wealthy people built special large houses called *hare-nui* to shelter their guests during a feast (*koro*). There must have existed a sort of competition between the feast givers as to who could erect the largest *koro* house. As on Mangareva, they were decorated with images (see p. 262).

Kitchen Shelters

Tepano assured me, though I could not verify his statement, that the ancient inhabitants of the island sometimes erected simple shelters to protect them from wind and rain. They placed in the ground seven rafters (*oka matua*) whose lower ends were curbed and upper ends tied to a horizontal pole (*hahaga*) supported by two vertical posts (*oka pou*). Horizontal sticks were tied to the rafters; then the whole structure was covered with reeds (*ngaatu*), sugar-cane leaves (*rau toa*), and grass (*mauku*). These easily constructed huts were readily abandoned and were probably analogous to the light structures built around the oven to form a kitchen. The oven was "palisadoed to the windward" (130, vol. 2, p. 256). People enjoyed sitting in front of or around the cooking place, where the men took their meals (87, p. 39).

Boat Houses

Near the pier of Hanga-roa are some sheds where the islanders keep their boats. With the exception of the thatched roof, nothing in the structure of such sheds is old. The roof, which is supported by stakes set at wide intervals, is composed of transverse sticks between which meager bunches of straw are stuck. The walls are made of piled stones.

Comparison with Other Polynesian Thatched Houses

The general shape of the Easter Island thatched house resembles the small, low huts with elliptical floor plan of the Tuamotus (in former days) and Rapa. The curving walls formed by bent rafters of Easter Island houses are

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also typical of Tuamotuan, Rapan, and Mangarevan houses. In the Tuamotuan house the ridgepole rests on or is suspended from curved rafters, but there are no ridgeposts and the horizontal ridgepole is of one piece. Rapan houses have only one curved wall, formed by curved rafters sunk into the ground at one end and lashed to the ridgepole at the other; the other side of the roof rests on a wall plate. Mangarevan houses have a curved rear wall, somewhat different from the Marquesan which is slanting. The curved walls are also similar to those of canoe houses of the widespread Polynesian type (Samoa, Society Islands, Rapa, etc.). However, the structure of the canoe house resulted from the necessity of having a roof with no ridgeposts to interfere when the outrigger canoe was hauled into the shed. Consequently this type of house can hardly be used for comparative purposes.

The funnel-like door of Easter Island houses is unparalleled in Polynesia and must be considered as a local development. The position of the door in the middle of the side links the Easter Island house more closely with the Mangarevan or the Rapan type than with the Tuamotuan which had the door at one or both ends.

The thatching technique of Easter Island in which bundles of grass are lashed to horizontal battens is called by Buck (ms. in B. P. Bishop Museum) the "horizontal method." This technique was used in Hawaii, New Zealand, and the eastern Tuamotus. Buck holds that the horizontal method was more ancient than the "vertical oblique" method used in central Polynesia, and that it was brought by the early groups of people into Polynesia, where it survived in the marginal areas.

Easter Island is the only place in Polynesia where rafters were sunk in the upper surface of stone curbs, but stone curbs outlining the house occur commonly in Mangareva and occasionally in the Society (77, p. 105) and Hawaiian islands.

Since houses with stone curbs were not the most common, pavement cannot be considered a fundamental feature of the Easter Island houses. Pavements in front of the houses existed on Mangareva, in the Cook Islands (33, p. 2), occasionally in Rapa, and in the Society Islands (77, p. 12). The Marquesan and Hawaiian houses which rested on stone platforms had in front of them an open terrace evenly paved. In dry and level places certain Marquesan houses were built on a simple pavement (141, p. 272).

These comparisons show that the Easter Island house does not stand as an isolated type in Polynesia. Unique features are the result of local conditions and the dearth of suitable material for house building. The most characteristic of these aberrant features is the curving of the ridgepole. Such form was imposed by the lack of rafters of equal length which could have maintained the ridgepole horizontal.

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Islanders in 1856, saw several European boats in possession of natives. He thinks that few canoes were made on the island. One of my informants, a woman of good judgment, told me that while fishing her grandfather was carried by a storm to Salas y Gomez reef, 200 miles from Easter Island. On his return he had a boat tattooed on his cheek to commemorate his adventure. If this voyage was actually made, it was certainly on a whaleboat.

When Eyraud went to the island for the first time the natives insisted that he build a boat for them. The missionary was reluctant, for he doubted that the wood supply was sufficient for that. The natives, who were not disheartened, shouted, "We have more wood than we need," and they collected every available scrap. With their help, Eyraud built a boat, which proved wholly inadequate when launched. When an Easter Islander, who had been absent for a few years, returned, chiefs with their retainers seized the boat on which he was coming ashore and fought for its possession until the boat was destroyed (230, vol. 6, p. 121).

These incidents express strikingly a deep-rooted love of navigation, despite the handicaps of nature.

Comparison with Other Polynesian Canoes

The Polynesians who colonized Easter Island must have traveled in double canoes. This is substantiated by the tradition that Hotu-matua and his followers arrived in two boats lashed together. The expression "a piece of wood," that Hornell (109, p. 103) interprets as referring to a raft, is an erroneous translation of the word *oraora*, the name of the craft on which traveled the six scouts sent by Hotu-matua (p. 56).

Easter Island canoes, though poor, retained traits which connect them with boats of other more favored parts of Polynesia. The typical raised ends of Easter Island canoes are characteristic of those in the Tuamotus (old model of a canoe), the Marquesas, New Zealand, Hawaii, and Mangareva. The upturned ends of Easter Island canoes (fig. 18, *a*) had a spatulate form which might be compared with the curved terminal of Hawaiian canoes, though these are much lower.

Evidence that double-outrigger canoes existed on Easter Island is exceedingly weak, resting solely on Choris' drawing. However, it has been accepted by Dixon (60, p. 76) who considers the supposed Easter Island double outrigger to be a sign of former, wider distribution of this type in Polynesia. As other proofs of the presence of double outriggers in Polynesia, Dixon refers to New Zealand, the Marquesas, and Samoa about which he is dubious. Hornell (109, pp. 31, 198) discards, with convincing arguments, the former existence of the double outrigger in New Zealand and in the Marquesas. A loose use of words is responsible for the statement that double outriggers exist in Samoa (109, p. 239). If the double-outrigger canoe was

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501 really known on Easter Island, this would be exceptional not only for Easter
171 Island but also for Polynesia in general.

The booms of Easter Island canoes were connected directly to the float. This so-called direct attachment has the following distribution in Polynesia: Hawaii, the outer Tuamotus, Rimatara and probably other Austral Islands, the Cook Islands (except Aitutaki), Tutuila (Samoa), and formerly the Marquesas. In the direct attachment type, the booms may be lashed to the float or inserted in it. The exact Easter Island method is not known, but, if the original sketch for the plate in La Pérouse's atlas (fig. 18, *a*) is correct, the booms of the outrigger terminated in forks holding the float, a method which is known nowhere else in Polynesia. Supplementary lashing must have existed, though it is not shown in the sketch. Possibly one point of the fork was inserted into the float as in the Cook Islands floats (109, pp. 163, 166).

Rafts

481 The natives made up for the shortage of canoes by developing a remark-
609 able skill in swimming. When a ship came in sight they all jumped into the water and tried to reach it, even if it was far away. Captain Rugg of the bark *Prudence* told Dumont d'Urville (63, vol. 3, p. 387) that when he passed Easter Island, natives did not hesitate to swim 2 miles in a rough sea to board his ship. Du Petit-Thouars (65, vol. 2, p. 228) says that women moved the legs and arms alternately in swimming while the men moved them at the same time.

501 The Easter Islanders used rafts (*pora*) made of bulrush mats, rolled into big, conical bundles. The swimmer reclined on the thicker part of the bundle which he grasped firmly with his hand while he paddled with his feet. According to my informant some of these bundles were 7 feet long and could be used simultaneously by two persons. Lisiansky (143, p. 58) is the first voyager to mention the *pora*. He describes it as a "rush mat which he [a native] used as support in swimming." Two of the islanders who boarded Du Petit-Thouars ship came on *pora*. "We were very much surprised," [609] writes Du Petit-Thouars (65, vol. 2, p. 231), "to notice that each of these natives was riding on a reed roller, of the form of a wheat sheaf. They brought us in order to be welcomed, bananas, sweet-potatoes and yams, enclosed in their reeds." The carrying of food in *pora* was often described to me by islanders and said to be the usual method for taking food to the *manu-tara* egg hunters on Motu-nui (p. 335). A *pora* illustrated in the atlas of Du Petit-Thouars is conical and slightly curved (fig. 33, *a*). It is approximately 5 feet high; the reeds are tied together at four different places. Palmer (171, p. 172) compares the float to "a very large elephant tusk, made of sedge, rushes, etc."

Before planks were introduced, natives used *pora* for surf riding. The natives seen about 1838 by the captain of the *Prudence* had substituted planks.

Paddles

Wood shortage is again reflected in Easter Island paddles (*mata-kao*; *hoe-hoe*, to paddle), which were made of two pieces: a separate blade (*pararaha*), lashed to a long handle (*kukuru*). Two complete paddles were collected by Thomson (215, p. 538, pl. 59), who describes them as "very old and highly

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prized by the islanders as the only specimen of the scull-oar used by their ancestors." Bishop Museum has three blades, of which one, half rotten, is very old and a good specimen (B3631). (See fig. 19.)

The front part of one paddle blade has a very light depression in the middle which is more accentuated, almost a groove, in the modern pieces. The upward projection to which the handle was lashed, has been hollowed out so that the butt of the stick lies between two raised borders and is fixed against a raised shoulder. At the lower end of the longitudinal depression, on either side, are two large holes through which the lashing was passed. On the back the upward projection has a flange, almost a knob, near the poll to prevent the tie from sliding out. The blade itself has a high median flange (93 mm. high in one specimen and 72 mm. in the others). This crest terminates in a round and flattened knob somewhat compressed in front. This knob (*ponga kekepu*), probably intended to give a pendulum swing to the paddle, rejoins in a continuous curved line the surface of the front side. The terminal knob has a piece of bone or tooth incrusted in the wood. Hooks were sometimes incised on the flanges. The handle lashed to the blade was a long piece of wood with a flange at the distal end.

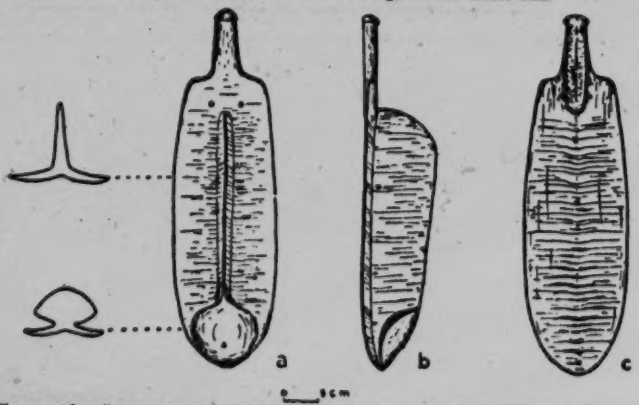

FIGURE 19.—Canoe paddle (*mata-kao*, B3631), blade 552 mm. long, and 133 mm. wide, handle fastened against upward projection 106 mm. long and 52 mm. wide; blade rounded and slightly curved backward: *a*, front with raised flange; *b*, lateral showing knob; *c*, back of paddle.

Hornell (109, p. 100) is misled by Thomson in regarding dance paddles (*ao*) as representative of the ancient type of paddle used on Easter Island and the actual paddles as scull oars. Dance paddles had nothing to do with navigation and are not derived from any known implement. The composite paddle with high median flange is very accurately reproduced in Lavis de Dubois de Vancy's original drawing (see also 83, vol. 1, p. 558). This and the unanimous testimony of the natives prove that these paddles were actually used.

The Easter Island composite paddle is unique, yet it has in common with the Marquesan and Mangarevan paddles a stout knob at the distal end. This

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501 knob is bulkier than those of other islands and lacks the beaked shape which characterizes both the Marquesan and Mangarevan paddles. On one face of ●171 Tuamotuan paddles is a median flange which prolongs the handle and stops near the distal end, also provided with a knob. The other surface has a ridge continuous to the tip. Some Hawaiian paddles (109, p. 17) have a small rib at the tip. Cook Islands paddles are characterized by a raised flange.

CORDAGE

283 Cords (*hau*) were made of *hau* (*Triumfetta semitriloba*) or paper mul-
[824] berry bast. The bark was stripped off the tree, the outer surface scraped away, and the bast allowed to dry. The fibers were rolled on the bare thigh into strands which were twisted together. The number of plies in ropes varied according to the size and strength required. Now only fine cords are made, principally for trade. Geiseler (87, p. 49) says that bulrush bast was used for making ropes, but he is certainly mistaken, for bulrush fibers are not strong enough for cords and natives never mentioned the bulrush among the cordage material. A microscopic analysis by Dr. Roland W. Brown of the seine net (*kupenga maito*) in the National Museum in Washington showed that the twine was made of paper mulberry fibers. Thomson (215, p. 460) speaks of the *hau* bark and of a native hemp. No hemp grows on the island and it is impossible to know to what plant Thomson alludes. Braided human
[826] hair (*hiri*) was very popular on Easter Island for cords. Even in Tahiti the Easter Islanders made such braids (56, p. 321).

MATS

285 Mats were termed *moenga* (thing-to-sleep-on); thus the name defines the
[764] principal use. Mats were also worn by women instead of tapa cloaks. Dead people were wrapped in mats, and many mat fragments were found in the tombs. Rolled into big bundles, mats formed swimming floats (*pora*). Not a single mat is to be had nowadays, but natives remember the general principle of technique, which is illustrated in two reed mats collected by Geiseler and stored in the Museum für Völkerkunde, Berlin (pl. 2, *C*).

The reeds (*Scirpus riparius*) come from the lakes of Rano-aroi and Rano-kao. They were split open with the thumb nail and allowed to dry for a few days before the soft substance was scraped out with the nails. The strips were then sewn together with doubled lengths of *hau* string spaced at intervals along the length of the strips. For technique see figure 20.

The mat shown in plate 2, *C*, is 159 cm. long by 107 cm. wide. It has 16 weft lines which are spaced about 10 cm. apart or nearly 4 inches. Another mat in the Berlin Museum (VI.4971) is 195 cm. by 187 cm. An informant writes that the ends of the strips were fastened by two strings that were knotted around each strip, but this technique does not appear in the mat figured in plate 2, *C*.

BASKETS

Food that natives traded to the Cook expedition was presented in large mat bags of very neat workmanship (83, vol. 1, p. 590). A woman depicted

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287 413 Tapa strips were sewn together over the edge of a piece of wood carved into the form of a club (*paoa tia nua*) or a wooden or bone plate. A whalebone plate serving this purpose was collected by Geiseler (fig. 22, *c*) which is identical to a breast ornament (pp. 230, 231); its function as a support may be a later specialization.

294 287 Geiseler collected a robe made of four distinct layers of tapa. It is composed of basted strips 35 cm. wide which run across the longer side. The threads are 2-ply twisted cords forming rows of stitches at right angles to the length of the strips. The stitches are 1 cm. long, and at intervals of 4 to 5 cm. At the edges, the threads are brought back and fastened on the back surface with a running stitch 2 cm. long. Stitches were sometimes used for decorative purposes.

287 Two coarser tapa sheets were purchased by the Franco-Belgian Expedition. On both sheets, the strips are sewn together with irregular hemming stitches. The edges of the strips are sewn only where they tend to bulge. The sheets are sewn across with rows of basting stitches to hold the strips together. On one sheet these stitches are 7 or 8 cm. apart and on the other 2 cm. apart. The threads are fastened at the edges with a back stitch and the ends of the threads are lost in the material. No tapa from Easter Island shows any trace of the use of a glutinous substance to stick the strips together.

287 413

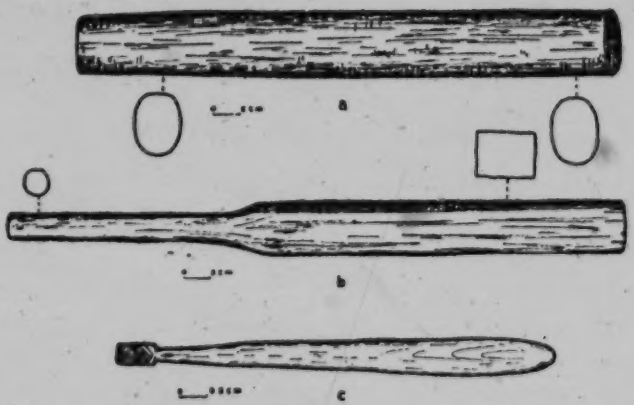

FIGURE 22.—Tapa beaters and support for sewing (Mus. f. Völkerkunde, Berlin): *a*, simple oval stick, probably a piece of wood picked up for temporary use and then discarded, 44.5 cm. long, diameter at center 5 cm. (VI.4876); *b*, flat beater with upper and lower surfaces slightly slanting toward proximal end, rounded, slightly pentagonal handle separated from beater by distinct shoulders on two sides, all surfaces smooth, shows signs of use; total length 46 cm., beater 4.5 cm. wide and 3.5 cm. thick, handle 2 cm. wide and 2 cm. thick at butt end (VI.4916, collected by Geiseler in 1884); *c*, wooden club used as support for sewing tapa, 102 cm. long (Geiseler coll. no. 61).

COMPARISON WITH TAPA ON OTHER POLYNESIAN ISLANDS

287 171 The paper mulberry did not thrive in the cold climate of Easter Island and the supply of bark cloth was always meager. The Easter Island tapa-making technique is, in general, identical with that of the rest of Polynesia.

The soaking of the bast in water for a few days—generally after a preliminary beating—is called "retting" by Burrows, who studied the distribution

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of this process. He considers it typical of central and marginal Polynesia (Rapa, Austral Islands, Cook Islands, Marquesas, Society Islands, and Hawaii). In western Polynesia retting occurs only in Tonga. Preliminary beating before soaking is not mentioned for Easter Island, Tonga, and Hawaii.

The square shape of the Easter Island tapa beater (fig. 22, *b*) resembles slightly the Mangarevan specimens. The relative thinness of the Mangarevan tapa beaters is due to the use of pandanus which affords only a thin slab of hard wood. The scarcity of wood on Easter Island may have brought about the same form. Tapa beaters were reconstructed for me by an intelligent native. Little ethnological value may be set on specimens patterned after dim recollections; but though not grooved, their general shape was fairly near the ordinary square tapa beater with rounded grip, usual in marginal and central Polynesia.

The anvil on which the bark was beaten was a square stone, because no logs were available. Stone anvils are described for the Marquesas (142, p. 473), but they do not seem to have been used in any other part of Oceania.

Easter Island is the only place in Polynesia where strips were fastened together by sewing. Elsewhere in eastern Polynesia the strips were felted together; in western Polynesia they were pasted. Tapa sewing was practiced in Hawaii to join together several sheets in order to make a blanket of many layers and sewing has been reported in the Society Islands (26, pp. 104-109). The basting stitch, used exclusively on Easter Island, is found on some old Hawaiian tapa.

Needles identical to those used on Easter Island for sewing tapa have been found in New Zealand and the Chatham Islands. They are probably pre-European, but no satisfactory suggestion has been made as to their use. The similarities between Easter Island and New Zealand needles are so great that details such as the occasional presence of two eyes on one needle, are present in both regions. The Easter Island needles like those of New Zealand have very small eyes which were bored by a technique which is puzzling. Steele (211, p. 187) supposes that in New Zealand these eyes were drilled either with a mature-bone drill on a green-bone subject, or by sawing on both sides of the needle with obsidian splinters until a hole appeared; the latter technique was apparently employed on Easter Island. Among the needles I collected on Easter Island some are curved, a form which also occurs in New Zealand. Needles with eyeholes were employed for sewing tapa in Hawaii, as on Easter Island. The specimens mentioned by Brigham are especially long and thick and more like the needles of Tonga, Fiji, and Wallis Island for sewing mat sails than the delicate bone needles of Easter Island.

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bered by modern natives. The origin of these hats cannot be doubted for the technique, the material, and the decoration are typical for Easter Island.

One of these headdresses (fig. 26, *b*) is a hat with a rounded crown and a narrow brim made of bulrush bands plaited in check. These bands are wound spirally and held together with strips of bulrush. The outside of the hat is covered with a piece of painted tapa.

On each side of the crown there is a human face modeled in relief and painted on the tapa. The outline of the face is formed by two superimposed rolls of bulrush wound with a strip of paper mulberry bast sewn onto the crown. The nose is a rounded prominence of the same material and fixed in the same way in the middle of the face. These crude features are covered with painted tapa. The eyes and the mouth are painted black, the nose and the cheeks are red. The tapa covering the brim is decorated with a red band and a series of black dots. On the top of the crown a red band alternates with a white one. Some dots and lines are still visible.

The hat was held in position by a 2-ply fiber string passing under the chin.

The other headdress (fig. 26, *a*) is a circlet with a human face in front. It is completely covered with tapa, which prevents any close study of the technique of the frame. The ring forming the circlet is made of two bulrush rolls tied together with *hau* strings. The front part of the headdress is modeled into a grotesque human face by means of bulrush rolls sewn to the foundation ring. The eyebrows are two wide arches raised above the ring, the cheeks bulge as if stuffed. An oval ring outlines the protruding mouth. The nose is a round protuberance between the eyebrows and the mouth. The eyes are oval discs of tapa and bulrush sewn to the tapa covering.

On the top of the eyebrow arch is a horizontal black line, on each side of which are alternating fields of red and black dots separated by vertical black lines. A wide band of red crosses the region of the eyes and the nose. On both cheeks there is outlined an elongated oval pointed toward the back, whose surface is covered by alternate fields of red and black dots separated by vertical lines. Similar dots occur on the mouth region. These motifs probably represent tattooing.

FIGURE 26.—Headdresses: *a*, tapa-covered circlet with human face in front, inner diameter 30 cm., height of face 12 cm. (Peabody Mus., Cambridge, 53541). *b*, hat of plaited bulrush covered with painted tapa with shallow crown and narrow brim: 1, part uncovered showing plaited foundation; 2, bulrush bands defining uncovered face; 3, covered bulrush bands defining covered face (Peabody Mus., Cambridge, 53540).

COMPARISON WITH OTHER POLYNESIAN HEADDRESSES

The feather circlets of Easter Island are similar to feather headdresses described by Laval for Mangareva (28, p. 172). Circles of pigeon or frigate

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bird feathers are frequently mentioned by early voyagers to the Tuamotus; the only known specimen is formed by split black feathers lashed successively to some foundation hidden by the spiral turns of a continuous 2-ply sennit cord (74). This technique is fundamentally like that of Easter Island. A feather ornament described by Linton (142, p. 433) from the Marquesas is not properly a circlet, since it ties under the chin. However, the feathers project on the head as in the Easter Island circlet. The quills of the feathers are wrapped against a core of twisted coconut fiber.

The only parallel which may be proposed for the Easter Island conical feather hats are the cone-shaped sennit skull caps of the Cook Islands which were sometimes covered with feathers tied to light rods (33, p. 92). It must be stressed, however, that this analogy is purely superficial, since the basic techniques are different.

If the Easter Islanders actually wore in their hair bunches of feathers attached to small sticks, this ornament was probably similar to the long feathers attached to smooth sticks which were used in the Marquesas (142, p. 434) and in the Tuamotus (74).

Ear Ornaments

Both men and women had their ear lobes pierced and the lobes distended "to near three inches in length" (53, vol. 1, p. 291).

These holes were pierced with a sharpened stick. At first only the point of the stick was left in the hole, but gradually the thicker part of the implement was pushed forward to widen the opening. Then a sugar cane leaf, a strip of bark, or white down of feathers rolled up like a scroll was inserted in the opening and gradually stretched. Finally the ear lobe became like a thin strap which fell down on the shoulder.

It is impossible to tell whether the elastic substances were actually ornaments or were used to keep the holes at utmost extension. Probably they were both. Some people, when not wearing any ornament, turned the rent lobe over the upper part of the ear.

Another kind of ear ornament, probably used only on exceptional occasions or by certain persons, was the ear plug described by Roggeveen (186, p. 15) as "roundish or oval, having a diameter of about two inches measured through the widest section, and one and a half inches through the narrowest, being three inches, at a guess, in length." These ornaments were of carved shark vertebrae (*ivi mango*), but some must have been made of shells. (See 53, vol. 1, p. 291.) One such shark-bone ornament, in the Museum für Völkerkunde, Berlin, has been published by Ratzel (184, vol. 2, p. 44). Palmer (171, p. 172) writes that he obtained an ear ornament of wood, the size of a fist, carved into faces and joined together. As there is no reference to wooden ear ornaments (for Behrens, on whose authority Palmer relies, speaks of white balls, without indicating the material), it is probable that the ornaments he gathered are simply *tahonga* (wooden pendants), which his de-

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301 Necklaces of common shells (*pipi-vaka*), shark's vertebrae, ti and sugar-cane leaves, and fruits of *Sapindus* were enumerated by my informants when discussing the ancient ornaments.

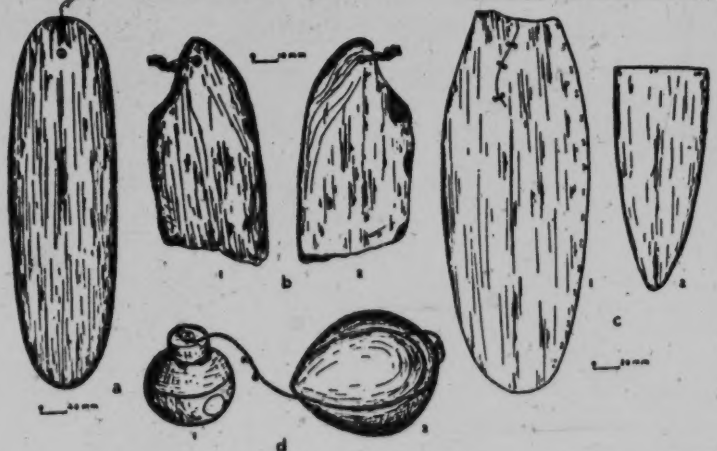

FIGURE 27.—Neck and belt ornaments: *a*, oval plate of turtle bone (*ivi taoraha*), 576 mm. long, 136 mm. wide, with suspension hole near upper end (B2579), *b*, fragment of a shell neck ornament 43 mm. wide, with suspension hole near upper end pierced from one side (B3577). *c*, plates of tortoise shell, parts of belt: 1, ellipse with holes along one side, crack mended by threads pulled through holes perforated along crack, 300 mm. long, 120 mm. in greatest width (B3652); 2, half elipse with holes along straight edge, 170 mm. long, 75 mm. wide (B3552). *d*, wooden ball neck pendants (*tahonga*; British Mus. 6817): 1, wooden ball, total height 68 mm.; greatest diameter 62 mm.; upper cylindrical projection 15 mm. high, 30 mm. in diameter; upper surface of projection cut down to depth of 5 mm., forming an outer rim 1.5 mm. thick and central knob 13 mm. in diameter with horizontal perforation for suspensory cord; 2, coconut-shaped ball; length 100 mm.; greatest diameter 83 mm.; four raised ridges radiate out from pointed end to divide ball into four equal segments; near base each ridge bifurcates and each bifurcation joins the adjacent one to form even curves, convex toward the base.

WOODEN ORNAMENTS

Crescent-shaped Breast Ornaments

301 171 A crescent-shaped breast ornament (*rei-miro*, fig. 28) was made generally of wood (*miro*), more rarely of whalebone. The word *rei*, widespread in Polynesia, usually means a neck ornament, but its original sense was a cachalot tooth, whale ivory. Cachalot teeth were worn by peoples of many islands (New Zealand, Mangareva, Marquesas, Hawaii) as highly esteemed neck pendants. In the language of Easter Island *rei* also means mother-of-pearl. Some shells used in necklaces are called *rei-pipipi*.

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Tortoise-shell Belts

Formerly, "when there were kings in Easter Island," turtles were caught by the natives both for their meat and for their shell. Tradition tells that in olden days the men wore tortoise-shell belts (*honu-toro*). During my stay on the island I received from a native some tortoise-shell plates which had been found in a cave. They had small suspension holes.

These plates are of two forms. Most of them are ellipses and have holes in groups of two, set in a row along one edge (fig. 27, *c*, 1). Others are tongue-shaped with holes along the straight edge (fig. 27, *c*, 2). Of the first type the largest specimens are between 320 and 340 mm. long and 125 and 132 mm. wide. The smallest are 260 mm. long and 90 mm. wide. The plates of the second type are 170 to 180 mm. long and 73 mm. wide. It is difficult to get a clear idea of the original appearance of the ornaments made from such plates. They are so long that it seems impractical to have them tied around the waist and the two forms do not combine. Since all definite information is lacking we are forced to accept the tradition and consider the plates as pieces of ceremonial belts.

Comparisons with Other Polynesian Ornaments

Deformation of the ear lobe to introduce wooden or bone plugs is restricted in Polynesia to Easter Island. The nearest parallel is found in the Marquesas where men and women used to wear in their ears heavy bone ornaments which distorted the lobes, but never to such an exaggerated size as on Easter Island (104, p. 288). In the Tuamotus the men pierced their ears to introduce ornaments but they never deformed their lobes. The Maoris must have had large holes in their ears in order to wear in them the objects mentioned by early observers. However, no reference has been made to an abnormal stretching of the lobe (20, vol. 2, pp. 535-540). Maori ear ornaments cannot well be compared to the plugs of Easter Island since most of them were pendants of bone or stone. Maoris, like Easter Islanders, occasionally wore strips or rolls of *aute* bark in their ears. The ear deformation of the Easter Islanders has been emphasized as a culture trait suggesting Melanesian affinity. Though enlargement of the ear occurs in Melanesia, it is not general and the Easter Island fashion may well have developed locally. The big ear plugs of the Marquesas are sufficiently close to the Easter Island ornaments to serve as an intermediate link between the custom of piercing the ear and of enlarging the lobe for insertion of pieces of wood or bone.

The oval plates of Easter Island, worn on cords round the neck, were substitutes for the whale teeth pendants common in other parts of Polynesia. The tongue-shaped neck ornaments resemble those worn by the Maoris in the time of Captain Cook (100, p. 20). The broken shell plaque (fig. 27, *b*) may be compared to the Marquesan plaques ground from the large end of a species of *Conus*. Linton (142, p. 428) attaches great importance to this ornament because it is rare in Polynesia but common in Micronesia. Since only one specimen is recorded from Easter Island, the parallel is of little significance.

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The wooden crescents or *rei-miro* are without any parallel in Polynesia. Large breast ornaments of quite different material and shape were worn in Tahiti and in the Marquesas (142, pl. 78). Perhaps the *rei-miro* are genetically related to the pearl-shell breast pendants widely spread in Polynesia. The superficial resemblance to the big, crescentic shells of the Solomon Islanders does not imply a connection between Easter Island and Melanesia.

The wooden balls (*tahonga*) are paraphernalia peculiar to Easter Island. The value given to wood on this barren island has favored the invention and development of a great many wooden ornaments unknown in other regions of Polynesia.

Body Painting

Until very recent times men and women smeared their faces and bodies with red, yellow, white, and dark dyes. The red dye (*kiea*) is a red-brown, weathered and mineralized tuff which is found in several places on the island, especially on the western slope of Poike Peninsula. *Kiea* was pulverized in a small stone mortar. Whole specimens or fragments of these mortars have been picked up in ancient settlements, with traces of red ochre in the hollow.

The bowl is made of an oval, waterworn stone which has been slightly abraded, but the general form is more or less conical. The cavity is shallow in proportion to the volume of the bowl. In the large bowls the hollow has been carefully ground while the outside is either slightly ground, pecked, or rough. The rim has also been carefully ground and made even. To judge from the fragments, some of these mortars were of beautiful workmanship; the interior is not only smooth and regular, but the bowls are almost perfect hemispheres. In the Bishop Museum collection, besides one whole stone bowl, there are fragments of nine others, of which one is almost entire (B3501, 5960). The largest fragment in the collection is 165 mm. long and the smallest 88 mm.

Another earth, probably unoxidized tuff, gives a chalk-white color (*mari-kuru*). To extract this earth the natives dug holes or pits. One of these mines was seen by the Spaniards under Gonzalez (90, p. 122) near Vinapu where there was a cave "with furrows in it of various tints, from which the natives gave us to understand by signs they obtained the pigments with which they paint themselves." Geiseler (87, p. 15) mentions a deep hole on the west slope of Rano-kao, out of which the natives dug a yellow pigment. Charred ti leaves mixed with sugar-cane juice produced a beautiful black dye (*ngarahu*). Yellow or orange dye was obtained from turmeric.

Though *pua* is the Easter Island name for *Curcuma longa*, the general Polynesian term *renga* has been preserved in the name of the two birds Manu-keukeu-renga who taught the natives how to prepare dye from turmeric root. *Renga* means also "something nice." According to the legend of the origin of the *renga* it was prepared in a special long house and the smell of the turmeric is still celebrated in legends (p. 369). Turmeric was uprooted (*keri*) with a pointed stick, then carefully washed (*tata maitaki*) and grated (*oro*) on a rasp (*tama*) made of fine *toro-miro* or *hau* sticks. The natives compared this rasp to a grill or a mat. The grated turmeric fell into a stone basin (*taheta*).

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The graphic documents confirm the observations of voyagers. The only representations of a full tattooing are the tapa images referred to above and the man sketched by Choris (49, pl. 11). A young man represented by Loti (145, p. 68) has the face undecorated though the body is beautifully tattooed. The native whom Stolpe (214, pp. 4-5) studied so carefully had only the head decorated in the ancient style. The motifs on the rest of his person were few and unimpressive.

These variations in the extent of the tattooed surfaces are good evidence that on Easter Island as in the Marquesas, tattooing was a lengthy process that took place at different periods of life.

FIGURE 32.—Tattooing comb and tattooed face designs: *a*, tattooing combs of bird bone: 1, comb 75 mm. long lashed at right angles to a handle 203 mm. long with thin white tapa bound round in a ball and then lashed with thin thread; 2, comb with six teeth, slight constriction below knob, 88 mm. long, 8 mm. wide at lower end (Mus. f. Völkerkunde, Vienna); *b*, tattooing of woman's face (from Lavachery, 134, p. 256); *c*, tattooing of man's face, vertical stripes on forehead given human form by adding dot at upper end of tapering body and bent arms at side (from Stolpe, 214, fig. 4).

Face Designs

Forehead. Tattooing of the forehead was called *retu*. Two parallel, straight or curved lines banded the forehead just below the hair line and then continued down the temples, turning backward at the level of the eyes (fig. 32, *b*). If curved, the parallel lines were divided into three segments: one in the middle with the concavity up and the others on either side. A series of large dots (*humu* or *puraki*) always ran below and along the stripes. Six to ten vertical, fusiform, or straight, solid stripes filled in the remaining space (fig. 32, *c*). The parallel lines across the forehead and the fringe of dots were the first motifs tattooed on the face, as evidenced by the fact that they were present on persons whose tattooing remained unfinished. This pattern was the most general, since it is the one commonly recorded by the early voyagers.

The Easter Island man depicted in Du Petit-Thouars' atlas (fig. 33, *a*) has triangular patches on the temples and in the middle of the forehead. This tattooing may be oversimplified and perhaps is not entirely reliable.

Forster (83, vol. 1, p. 564) writes: "They are all prodigiously punctured on every part of the body, the face in particular; and their women who were very small and

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Comparisons with Other Polynesian Wooden Images

Wooden images of humans are common to the cultures of eastern and central Polynesia. The decayed condition portrayed in Easter Island images is foreign to other Polynesian art, except that of the Chatham Islands. A Moriori image (206, pl. 4) has protruding ribs and a retracted abdominal region. However, all other features are treated quite differently from those on Easter Island images. Ribs are frequently represented on the famous tree carvings of the Chatham Islands and ribs may be seen in some Maori *hei-tiki* (206, p. 66) and in the cave drawings from the South Island of New Zealand. The position of the arms—slightly flexed and lying along the thighs—is the same in Easter Island and Hawaiian images (142, p. 89).

Small wooden images seem to have been used throughout Polynesia as temporary tabernacles for gods and ancestral spirits. Probably such was their function on Easter Island. In New Zealand sticks with conventionalized figures carved on one end were used as temporary shrines for the gods (20, vol. 1, p. 281). In the Whanganui district small images were kept in the house "each of which is dedicated to the spirit of an ancestor of the family, who is believed to enter into its substance, on particular occasions, in order to hold converse with the living" (203, p. 63). Occasionally Maori wooden images were made to represent defunct relatives before which the living wept while food was offered to them (20, vol. 2, p. 60). Tahitian *ti'i* (wooden images) were also temporary receptacles for lesser gods or spirits who were called into the image by a priest or a magician (107, p. 203). The naturalistic Mangarevan wooden figures represented gods, especially the god Tu. The small stone and wooden images of Hawaii and the Marquesas were probably ceremonial objects but their exact use is not known.

Good-Luck Objects

The magic significance attributed by one of my informants to the signs on the tablets probably derived from the fact that the natives consider as talismans or amulets every stone with an incised figure. Numerous boulders with engraved designs on them have been found on the island. The design which is most frequently reproduced on the stones is that of the vulva, stylized as in figure 42, *e-f* (p. 258). Rarely the outline of a fish, a bird, a turtle, or a man is seen (fig. 42, *b-c*). The carved figures might have increased the magic power of the stones or simply distinguished them from ordinary boulders.

J. L. Young, who collected some magic stones with the incised representation of the vulva, was given the correct name, *maea mo moa* (stone for fowls) and was told that the stones "were placed under domestic fowls with the idea that the fertility of the eggs was thus promoted" (229, p. 171). A

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design (fig. 43). Of the two skulls I collected, one bears the figure of a dance paddle (*ao*), the other that of a bird very like the one engraved on the skull reproduced by Routledge. In 1912, Knoche (123, pp. 214-215, fig. 73, *f*) obtained three magic skulls which were similarly marked. The designs are described as follows:

> The three designs are on the foreheads of the skulls and have probably been incised with a sharp piece of obsidian. One of the figures shows a simple system of lines. It is placed exactly above the supra-orbital of the right side and ends on the left side. There are three pairs of lines, and one of them is perpendicular to the others. The pairs are combined in a curious way so that they produce two rectangular triangles. The second design has the form of circles. The lower periphery is almost parallel with the glabella. The third figure is the best incised and is on the oldest of the three specimens. On the left side of the frontal bone there are four isosceles triangles with parallel sides which cross each other on the summits. The right side of the fourth triangle is lacking. The summit is on the glabella. The base of the triangle is slanting to the left socket.

Present-day natives still believe in the power of the skulls and are reluctant to part with them. They say that the skulls of the *ariki-paka* (noblemen) were stolen from the ahus. Relatives of the dead whose skulls had been stolen felt the insult deeply and sometimes resorted to war to avenge such injuries. This information is invalidated by the tradition concerning the skull obtained by Routledge (194, p. 240). It was the skull of Hotu who made it an heirloom because "it was extremely good for chickens" and he did not wish it to go out of the family. His son gave it to a relative whose son was an old man, and from him Routledge bought it. The incised skull which was sold to me by Tepano had been presented to him by the uncle of his wife.

This belief in the fertilizing power of *ariki* skulls is paralleled in other parts of Polynesia. In the Marquesas the skulls of chiefs were preserved separately and were brought out for certain public activities. Such skulls were taken on fishing expeditions to ensure a good catch and to protect the fishermen from sharks (104, p. 166). Maoris used to place the skull or bones of their ancestors in the sweet potato fields to procure a good harvest (20, vol. 1, p. 387).

DANCE ACCESSORIES

Dance Paddles

The two types of dance paddles were the *ao* which was large and the *rapa*, which was small. These paddles were held at the middle of the shaft by the dancer or chanter and were twirled very rapidly in the rhythm of the chant. The catalog of the Museum of the University of California contains an interesting statement about one of these paddles (1159): "It was used by chiefs in their war dances before the king. They were twirled and shaken in close proximity to his face as tho' to frighten him."

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UNCLASSIFIED ADZES

324 412 Some specimens in the Bishop Museum collection cannot be included in either of the two types just defined. However, they are too few and too crudely made to be considered as a special type.

Two adzes (C3949, B3600) are decidedly triangular, but they are only chipped, with no trace of grinding. As they are unfinished, their shape cannot be considered distinctive. Had they been ground they would have belonged to type 1.

The adz in figure 47, *c* is characterized by its square cross section and by the more or less equal width of its four surfaces, which are well ground.

In the entire collection there are only three small adzes with a more or less circular cross section (B3542a, C3906, C3950). (See fig. 47, *d*.) Two are broken and, though small, may be included in type 2.

MODERN IMITATIONS OF OLD ADZES

439 When Easter Islanders discovered the commercial value of the implements left by their ancestors, they increased their supplies of antiques by faking specimens. In the Young collection I picked out 29 adzes which were obviously counterfeit. The bevel of modern adzes is ground on both sides as in European tools and the surface of the bevel is too even to have been obtained by ancient methods. The imitators apparently selected thin plates of stone with the general adz shape when that was possible.

The natives no longer make adzes. However, I was presented with a stone knife of the same material as that used in the old adzes, and I was later told that it had been made during our stay.

HAFTING

In the Bishop Museum collection there are hafts of two adzes from Easter Island (fig. 48, *a-b*). Their form corresponds to that of one hafted adz collected by Thomson (215, pl. 57). Easter Island adz hafts have several distinctive characteristics:

The shaft is continued to meet the front of the foot, as there is no projecting heel. The front of the toe which supports the adz is flat; the back and the sides are convex.

An Easter Island shaft collected by Thomson (Nat. Mus. 129734) has a heel with a longitudinal depression on its upper surface in which the stone blade was embedded (fig. 48, *c*). Another hafted adz in the same collection resembles those in figure 48.

COMPARISONS WITH OTHER POLYNESIAN ADZES

412 171 Comparative study shows that Easter Island adzes are connected with those of the rest of Polynesia. Type 1 is widespread and probably ancient; type 2 was developed locally, though it resembles adzes of New Zealand and the Chatham Islands.

Tangless adzes are found almost everywhere in Polynesia. However, the tanged adz has been adopted throughout central and marginal Polynesia, with the significant exceptions of Mangareva and Easter Island (35). It would seem, therefore, that the Easter Islanders broke away from the rest of Polynesia before the specialization of the adz took place. The adzes of western

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Polynesia (Futuna, Tonga, Niue, Samoa, and Pukapuka) are generally tangless. The adzes of type 1 (small and flat, with longitudinal lines converging toward the poll, quadrangular cross section) belong to a class represented throughout Polynesia with the exception of Hawaii.

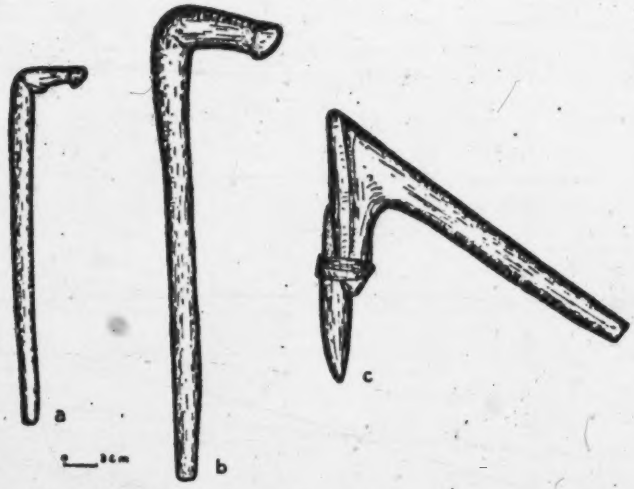

FIGURE 48.—Adz hafts: *a*, two grooves at inner angle of toe meet to form triangle which holds lashing in place, end of toe bulged at sides and back to prevent lashing from slipping down, shaft 292 mm. long, toe 58 mm. long and 22 mm. wide (B3521b); *b*, end of toe bulged at back, shaft 441 mm. long, toe 142 mm. long and 55 mm. wide (B3521a); *c*, hafted adz, groove in heel 18 mm. deep and 87 mm. long, total length of heel 188 mm., length of shaft 375 mm. (U. S. Nat. Mus. 129734).

The pecking process has been used in shaping many of the Easter Island adzes of type 2. According to Aitken (4, p. 139), pecking is absent or rare in Hawaiian, Samoan, and Pitcairn adzes and is present, but rare, in Tongan and Marquesan adzes. Pecking was widely used in Easter Island, Society Islands, Tubuai, Rapa, Cook Islands, and New Zealand. The absence of pecking in Mangareva does not seem significant as most Mangarevan adzes are very crude. Pecking is generally associated with superior workmanship.

Linton (142, p. 235) probably had in mind the thick, rounded adzes of type 2 when he applied the term "Melanesian" to certain Easter Island adzes. However, the oval form of these adzes is due to the rounding of the edges and not to a lenticular or completely rounded shape so characteristic of Melanesia. Some Fijian adzes, though longer and thicker, suggest a link with the Easter Island type 2. However, the Fijian specimens are highly

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412 polished, more slender, and their general style is little reminiscent of that of
171 Easter Island adzes.

The resemblance between several thick, heavy adzes from New Zealand (22, pl. 9) and the Easter Island specimens is so striking that it would be difficult to distinguish between them if they were placed together unlabeled. The New Zealand adzes, however, are a little more quadrangular in cross section. Some Moriori adzes and chisels (206, pl. 24, *a-c*; pl. 25, *h-o*) can be compared to some varieties of our type 2. The Moriori specimens have a distinctly round cross section, but some of them might have been chisels.

A few Easter Island adzes of type 2 tend to have a triangular cross section, the apex of the triangle comprising the front. Although this type is rare and ill-defined, it shows a remote relationship between the Easter Island adzes and the triangular adzes (*toki kouma*) of New Zealand, Mangareva, the Tuamotus, Tahiti, and the Marquesas.

The groove on the Easter Island adz is a local feature. In other regions (Rapa, New Zealand, Chatham Islands) some adzes have a tang which might have developed from a groove as evidenced by the presence of a knob on the poll. This knob gives to some tangs the appearance of a long groove.

Chisels

324 Distinction between adzes and chisels is based more on function than on
412 form. The adz was used with a swinging blow and was hafted on a knee-shaped shaft, whereas the chisel was driven by direct pressure of hand and arm or by mallet blows and was hafted axially. Only one hafted chisel from Easter Island has been preserved (fig. 49, *a*). The label gives this specimen the native name *kau toki* or *tingi* (strike).

A fragment of a stone tool (Bishop Mus. B3542) has such a curved cutting edge that it is nearly a gouge but the thickness (32 mm.) of the tool makes it more like the adzes of type 2 than like a chisel. Another fragment (Bishop Mus. B3541f) which has been sharpened by grinding on both faces is probably a chisel.

Modern Easter Islanders consider that all small adzes were used to carve the eyes of stone statues. They term *tingi* all specimens they believe to have been chisels. They haft European chisels as they did the old stone adzes, but they also employ chisels with a wooden mallet when carving wooden images. The favorite stone for chisels was an olivine andesite from Mount Otu.

Picks

Hundreds of picks with which the giant statues were carved are found in the ancient quarry on the slope of Rano-raraku. They are large, roughly chipped stones of the same nature as the lapilli in the tuff. They are generally

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Young collection there is a lump of coral which would have served this purpose. Unfortunately the origin of the specimen is uncertain. 324

One piece of basalt (Bishop Mus. B3553) has parallel grooves on both sides. Judging from the V-shaped cross sections of the grooves this stone must have been used for grinding the cutting edges of sharp instruments, probably knives or small adzes. 412

Comparisons with Other Polynesian Cutting Implements

The tanged knives of Easter Island resemble slightly a Moriori flint knife (206, pl. 26, *d*), though the Moriori specimen is cruder. An obsidian knife which is quite similar to the Easter Island spear heads and stone knives with a long cutting edge and a rudimentary tang have been found in the Chatham Islands (206, pl. 26, *g*, *e*). Bennett (19, pp. 63-64) describes a few stone knives found on Kauai in the Hawaiian islands. They are somewhat like Easter Island knives but are far more crude, and lack the semicircular cutting edge characteristic of Easter Island specimens. The stone knife in Polynesia seems to be a culture trait without significance for comparative purposes. 412 171

SANCTUARIES

The funerary cairns or ahus of various descriptions that extend along the coast in an almost continuous succession were probably the sanctuaries of the Easter Islanders corresponding to the maraes of central Polynesia. These structures, which have been used until recently as burial vaults, are associated in the memory of the natives with religious feasts; it was probable only after the introduction of Christianity that their former sacred function was forgotten. Like the maraes each ahu belonged to a distinct lineage. There is still a dim recollection of the ties uniting certain families to specific ahus. In this respect the analogy with central Polynesia is so striking that there is little doubt that the ahu is the equivalent of the marae. 346 778

The study of the ahus constitutes the most important and complex division of Easter Island archaeology. I have published elsewhere a general survey (153) and Dr. Henri Lavachery is preparing a detailed discussion of the ahus, based on his field work. Here it is sufficient to give a general account of their main features.

Ahus are the most common monuments on the island and give it much of its individuality. Most of them are located near the shore, and except on the barren headland of Poike and the steep cliffs of the southwest point, form an almost unbroken line along the coast. They are most numerous around coves and other particularly habitable spots and are generally associated with house foundations. Many ahus have been destroyed and the names of others forgotten. Yet Routledge (194, p. 166) estimated that there were 260 ahus on

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346 These ahus are especially numerous on the north coast, in the region of Hangoteo. One of them, between Hangoteo and Puna-marengo, is surmounted by a low stone pillar. Routledge calls this second class of *ahu-poepoe*, "wedge-shaped" ahus, since their form suggests a giant wedge (pl. 5, *A*). There are six of them on the island.

Rectangular Ahus

Routledge does not include in her classification of ahus a type which, though not common, exists in several places on the north coast. This type is a rectangular heap of stone with burial vaults in the interior (pl. 5, *B*), differing from the "wedge-shaped" variety of the *ahu-poepoe* only in having the upper surfaces flat rather than sloping. Ahu Avanga Vai-porotu, situated on a sea cliff near Vai-tara-kai-ua, is a typical rectangular ahu.

It is made of large boulders and from afar it resembles a *haremoa* (hen house). It is almost rectangular, although the four corners are slightly rounded. It is 6 meters long, 2.8 meters wide, and 1.3 meters high. The center of the heap of stones is hollowed, forming a big vault 3 meters long, 60 cm. wide, and 65 cm. deep. The walls are not perpendicular but are made up of rows of stones which converge toward the top. In the vault were three skeletons. On the seaward side of the ahu, there are stones placed in the ground in crescentic form.

Another structure of the same type, but in poorer condition, is below the hill of Vai-tara-kai-ua. Its vault is larger and deeper, and it is possible to stand inside. Long slabs close the entrance at the top.

Comparisons with Other Polynesian Religious Structures

778 346 171 Easter Island sanctuaries have numerous affinities with religious structures in other parts of Polynesia (Mangareva, the Tuamotus, Society Islands, and Necker Island in the Hawaiian group). This fact is of primary importance for a clear understanding of the origin of Easter Island culture. The Easter Island ahus are essentially stone platforms; the paved slope of some may be regarded as a sort of court, but in general the space in front of the ahu is not defined by any enclosure or pavement.

The stone platforms of Easter Island are always termed ahu, a word which also means "to swell, a protuberance, a heap." In the Tuamotus and Tahiti the word ahu is restricted to the raised stone platform at one end of the marae. In New Zealand *tu-ahu* is a sacred open place with an erect post, stone, or row of stones at one end (20, vol. 1, p. 288). On Nukuhiva and Uapou in the Marquesas, ahu is used for the religious structure which in the other islands of the group is called *me'ae*. In the Hawaiian islands, the word *ku-ahu* designates an altar or a stone platform at a sacred place.

The word *tahua*, which on Easter Island applies to the paving in front of an ahu, is the equivalent of the Marquesan *tohua* which designates the tribal assembly place at which feasts were given and certain classes of cere-

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monies performed. In New Zealand the word *tahua* (courtyard) is a synonym of marae. In the Tuamotus and Society Islands, *tohua* formerly designated the level ground of the marae and is now used for floor. Linton (142, p. 53) thinks that in southeastern Polynesia *tohua* is the ancient term for assembly place. The use of this word on Easter Island supports his hypothesis.

In the Tuamotus, Cook Islands, Austral Islands, Rapa, and Mangareva, the term marae designates a sacred place. In New Zealand it applies to the village green and has nothing to do with the *tu-ahu*. In Samoa, Tonga, Futuna, Uvea, and Pukapuka the word *malae* has the same meaning. Linton (142, p. 50), Emory (78, p. 40), and Burrows (35) have come to the conclusion that the marae, as a religious structure, resulted from the combination of the platform (ahu) with the assembly court which assumed a sacred character. This fusion of the two elements occurred in central or marginal Polynesia after the Easter Islanders separated from the other Polynesian groups. Hence the Easter Island sanctuary remained a platform without a defined court and was called ahu and not marae.

Mangarevan maraes are more similar to Easter Island ahus than to any other stone structures in Polynesia. They have a rectangular platform across one end of an unenclosed court (71). The court face of the platform has one or two steps and the largest maraes, at least, have burial vaults in the platforms. Marquesan mortuary maraes (*me'ae*) are analogous to Easter Island ahus only in general structure, in name, and in the presence of wooden and stone images on the platforms (141, pp. 32-40). Tuamotuan maraes have a platform and rectangular court; upright slabs at the rear of the platform occupy exactly the same positions as the statues on Easter Island ahus (78, p. 22). Although the dead were not buried in the Tuamotuan platforms, the maraes were connected with the cult of deified ancestors. The inland maraes of the Society Islands are very similar to Tuamotuan maraes and hence have affinities with Easter Island ahus (77, pp. 38-40). Maraes of this general type have been found on uninhabited Necker Island, northwest of the Hawaiian group (72, pp. 60-71), and on Sydney Island in the Phoenix group.

The Easter Island ahu is probably a very old type in Polynesia. When the Easter Islanders left central Polynesia the religious platform faced with slabs had been developed, but this structure had not yet become associated with a court (marae). The inland side of the platform which is stepped in Mangareva and the Society Islands became in Easter Island a sloping surface with but one or rarely two steps retained. The striking originality of the Easter Island ahu lies in the two slanting wings which are found nowhere else in Polynesia.

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STONE MASONRY

324 333 Cut stones were used extensively on Easter Island. Dressed slabs or blocks are found on most of the big ahus and appear in structures such as wells and underground houses, and in the stone houses of Orongo. Worked curbs, taken from the foundations of thatched huts, were often incorporated into the facings of ahus and wells (pl. 1, *C*).

171 324 333 Apart from Easter Island, there are only three regions in Polynesia where stone cutting was well developed—the Marquesas, the Society Islands, and Tonga. In Tonga the material employed was easily worked limestone (147, p. 5); in the Marquesas, coarse-grained tuff (141, p. 8); and in the Society Islands limestone or tuff blocks and occasionally basalt (77, p. 5). The excellence of Easter Island stone work is due partly to the use of hard vesicular basalt. Though cut stones were not so common on Easter Island as in the Marquesas, they show a more elaborate technique.

The presence of dressed stone masonry in Polynesia has been cited as evidence of foreign contact or of two distinct migrations of people. However, examples of such work are scattered and show no uniform specialization. Generally the dressed slabs are merely trimmed at the edges and smoothed on the face. This is a simple technique which might easily be invented and applied locally. Stimulus for the cutting of stones was the desire to improve upon the slabs so abundantly provided by nature in most Polynesian islands. The lava dikes, the tuff deposits, or the limestone strata, found on the surface of the ground, were ready to be quarried and broken into rectangular slabs.

The facings of a few Easter Island ahus are among the most perfect masonry work in Polynesia. The slabs or blocks have not only been smoothed to evenness, but they have been dressed or selected so as to fit exactly (fig. 52; pl. 4, *A*). The masterpiece of Easter Island stone work is the ahu Vinapu (pl. 7, *B*):

> The seaward wall is made of two rows of marvelously smooth slabs whose edges join with mathematical accuracy. The corner slabs have been rounded. A hole in the face has been patched with a stone carved to fit perfectly. Such a facing resembles the famous walls of the Inca palaces of the Cuzco. Historical connections have been proposed to account for this similarity. However, it must be remembered that ahu Vinapu is unique on Easter Island—an extraordinary achievement carrying to the height of perfection a few simple techniques, applied with less skill in other monuments. Between the Easter Island monuments and the great buildings of Peru the similarity does not go beyond the exact fitting of the stones. The plan and the structure of the Inca ruins are entirely different. There is neither geographical nor chronological link between the two cultures. The wonderful stone constructions of the Peruvians lie in the valleys of inner Peru or on the highland of Bolivia, and are separated from the sea by mountains and hundreds of miles of land. If there had been a historical connection between Easter Island and the interior of Peru, surely there would have been more evidence of the contact than a simple and obvious device of masonry.

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Exact joining of masonry by means of jogs was practiced in other parts of Polynesia, for instance in the facing of a marae on Meetia, near Tahiti (77, p. 118), in the construction of an irrigation ditch on Kauai, Hawaiian islands (19, pp. 105-106), and in the village of Kailua on Hawaii (72, p. 47). However, this scarfing technique was too exceptional to be considered a special culture trait scattered by migrations. It must have been developed locally by patient stone cutters.

The Easter Island retaining or facing walls, made of vertical slabs planted on end and capped with horizontally laid slabs, have a close affinity with several maraes in the leeward Society Islands and with a heiau on the island of Nihoa in the Hawaiian group (72, p. 46). Similar construction was used in the facing of large Mangarevan maraes, in the Tuamotus, in Tongareva (30, fig. 40, *b*), and in the Marquesas where the tops of many slab walls are finished with one or more courses of water-worn boulders (141, p. 12).

STONE IMAGES

The Quarry

The quarry of the giant statues on the slopes of Rano-raraku crater is one of the most spectacular places on the island. The fame of Easter Island rests mainly on the amazement produced by this quarry and by the unfinished statues in it. Routledge (194, pp. 175-199) devoted most of her time on the island to a study of this quarry and, with the help of Lieutenant Ritchie, made a complete and accurate survey of the site.

Almost all the statues standing on ahus came from Rano-raraku. The only exceptions are: the stone image taken from Orongo and now in the British Museum; the image Pou-hakanonga, from the ahu Ana-koiroroa, which is now in the Musée du Cinquantenaire, Brussels; another basaltic statue at Puna-marengo; and seven or eight statues of the ahu on the headland of Poike which were carved from a local soft rock.

The Rano-raraku was chosen as a quarry because of the suitable quality of the rock. The volcanic cone, situated on the south coast not far from Poike, is composed of bedded ashes derived from the crater. The southern slope of the exterior of the volcano and the southern and southeastern sides of the interior were quarried, probably because the rock was most easily reached there.

The quarries on the southern outer slope of the volcano begin about 50 or 60 meters above the foot of the hill. There the tuff crops out between vertical fissures 10 to 20 meters long. The ledges produced by these depressions differ in width and are responsible for the positions and sizes of some of the unfinished statues. The carvers often had to climb steep walls to reach the portion of rock on which they were working.

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Transportation of Stone Statues

483 773 Modern natives are unable to explain the methods used by their ancestors for transporting the stone images. This break in the oral tradition is perhaps ancient, for soon after first European contact natives had to resort to legends to satisfy those who inquired about the subject. They told Roussel (190, p. 498) that a chief endowed with power (mana) had ordered the statues to walk. "Hearing his words, all the statues set out and picked out the places which were the most convenient to them." Palmer (171, p. 181), who probably heard this legend from Roussel, says that this great chief was Tukuiu (Tuu-ko-ihu). According to Zumbohm (230, vol. 6, p. 128) the mythical being whose power dispersed the statues from the quarry to the ahus was the god Makemake. In a later version (37, p. 29), this achievement is attributed to the priests (*ivi-atua*) who moved the statues at the request of those who wanted them on their family ahus. The huge blocks walked for a distance and then stopped. Each day the priests repeated the charms until the images had reached the spot for which they were destined.

483 More technical traditions about transportation are rare. A native called Haunoko told Jaussen (115, p. 245) that round boulders were put under the images and that the natives pushed, dragged, and rolled them to the place of destination. Geiseler (87, p. 12) was shown some holes along the edge of Rano-raraku crater in which rope tenders stood while paying out rope as the statues slid down hill; they made turns around projecting blocks when the statue had to be belayed. The image was dropped into a hole which had been dug for it.

Routledge (194, p. 189) noticed many stones behind the statues, evidently used when the images were erected. Some statues were left standing at an [401] angle. The natives remember that the hats were put on the heads of statues by erecting piles of stones against an image and then rolling the cylinders over the stones. A similar method was used in placing large stones in Marquesan [171] structures (141, p. 8). I was told that levers (*akaue*) were used for transport and that taro and sweet potatoes were put under the statue for lubrication.

The weight of the Easter Island images has usually been over-estimated. Professor Delacroix, Director of the Laboratory of Geology in Paris, has kindly calculated for me the specific weight of the Rano-raraku tuff. The density of this rock is 2.48. Taking this figure as a basis, Dr. C. K. Wentworth, Associate in Geology at Bishop Museum, has estimated the weight of the average statue transported from the quarry to the ahu. Statues 4 or 5 meters tall weigh at most about 4 or 5 tons. I doubt whether the weight of any of the giant statues which stand near the quarry exceeds 30 tons.

[171] Other Polynesians have carried weights as heavy as the Easter Island

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statues. For example, a platform in a dance court of Uahake-kua in the Marquesas includes boulders weighing from 3 to 10 tons (142, p. 7). Two 60-ton vessels, blown inland by a hurricane, were carried back to the sea by Maoris. It is said that one was transported by 2,000 men; the other by only 200. Huge logs for canoes were hauled from the forests by the Maoris; in going down a steep slope the log was lowered slowly by means of ropes (21, pp. 62-73) as in the method described by Geiseler for lowering Easter Island statues down the quarry slopes. The pillars for the famous trilithon on Tonga, weighing between 30 and 40 tons, were quarried near the shore and "were dragged over wooden skids, by means of heavy ropes and the combined musclar power of many men" (147, p. 64).

The transportation of the images on Easter Island was not so difficult in pre-European days as it would be now, for then the long plain extending across the island from Rano-raraku was covered by high, slippery grass, such as now exists on the islet of Motu-nui. Probably statues were rolled on wooden skids as in Tonga. The large size of many wooden implements (*ua, rapa*) indicates that sufficient wood was available for this. The size of some Easter Island nets made of paper mulberry fibers shows that there was no scarcity of material for making long ropes. Moreover the example of the Maori indicates that there was no need for a great many cables to haul a large and heavy mass. The major difficulty in transporting Easter Island images was not the great weight but rather the fragility of the soft tuff. The moving of statues without scarring them is, in my opinion, the greatest achievement of the Easter Islanders. The statues were dragged on their broad, rough backs; any damages could be repaired after the statue was erected. The statues were probably hauled a bit at a time, possibly by a whole tribe working together as in the Marquesas (104, p. 206). This is also the opinion of Roussel (190, p. 498) who writes: "We may believe that on occasion of a feast all the tribes gathered and each one took its family gods and dragged them with hau ropes to their respective districts." The largest images, weighing from 20 to 30 tons, were not carried far from the quarry, but were set up at the foot of the hill. The farther one goes from the quarry the smaller the statues become. This indicates that resourcefulness and man-power were limited. Along a rocky portion of the north coast near Hango-teo there are no image ahus, and the only image found there is of basalt carved on the spot.

It has been suggested that the Easter Islanders transported their images on rafts. However, this is absurd, for there was not enough wood on the island for the construction of sufficiently large rafts and the rocky coast near Rano-raraku affords no good landing place. The smaller statues might have been carried on wooden litters, a method much used in the Marquesas (142, p. 10).

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The name *moai-te-atua* given by modern natives to some statues does not necessarily imply that they represent gods (194, p. 301). The term may be modern, for a statue symbolizing a god would have borne his specific name. Neither is there evidence that the standing images of Rano-raraku were the images of the successive bird-men, as suggested by Routledge (194, p. 264).

Moerenhout (162, vol. 1, p. 461) and Gill (89, p. 213) make the strange suggestion, eagerly accepted by Rivers (185, p. 306), that these images marked the limits of earth and sea and were believed to prevent the encroachment of the sea. Balfour (10, p. 72) rejects the interpretation on the ground that the very position of the Easter Island statues excludes the idea of any connection with the sea.

Geiseler (87, p. 14) says that these images were believed to be endowed with power and that both the standing and the unbroken prostrate ones were alive. This is probably not true as no objection was made to the removal of an image from Orongo by the *Topaze* Expedition or to the decapitation of an image on the ahu of Hanga-roa.

Thomson (215, p. 498), perhaps on his own authority, declares that these images "were designed as effigies of distinguished persons and intended as monuments to perpetuate their memory." I was told that the statue called Paro, of Ahu-te-pito-te-kura, was erected by a widow to her dead husband.

If the statues are deified ancestors, they may be compared with Marquesan statues of deified ancestors who had become tutelary tribal deities. The desire for display was certainly a predominant motive for the carving of these giant statues, but it is questionable whether this was sufficient to provoke as much energy as that required for the transportation of enormous statues. On the other hand, to assume that the motive for making the images was entirely religious is to underestimate the tribal pride and competitive instinct of Polynesians.

Comparisons with Other Polynesian Stone Images

The carving of human images from wood and, less often, from stone is one of the culture traits which distinguishes eastern and marginal Polynesia from western Polynesia, where carving of human figures is less developed (35). Large stone images were carved only in the Marquesas, Raivavae, and Easter Island. In these three regions tuff is abundant and is easily worked. In New Zealand the Maoris carved two human figures representing gods from the rhyolitic tuff deposits of Lake Rotorua.

As pointed out by Linton (141, p. 88), everywhere in Polynesia wood carving seems to have preceded stone carving. Several features of Easter Island stone images, such as the flat surfaces, the treatment of hands, and outline of chin, are reminiscent of wooden images there. However, there is more resemblance between the Easter Island stone statues and the Manga-

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171 532 revan wooden images than between the wooden and stone images of Easter Island. Mangarevan images share with the Easter Island stone statues the typical pursed mouth, but the differences are numerous.

Balfour (9, pp. 361-371), overlooking the Mangarevan parallels, stresses the similarity between the Easter Island stone images and canoe-prow gods and other representations of human form from New Georgia, San Cristoval, and other parts of the Solomon Islands. The proposed analogy strikes me as unconvincing, for the only similarities between the two types of image are the overhanging brows and the long upward-curving nose.

Comparative studies of the religious structures in eastern and central Polynesia reveal a remarkable analogy between the position of the Easter Island statues on the ahus and the uprights on the religious platforms of the Tuamotus, Society Islands, and Necker Island. Detailed research has convinced Emory that the uprights at the back of Tuamotuan ahus, bearing the names of ancestors, were either backrests for the gods or memorials to deified ancestors. In the Tuamotus and in Tongareva the unrights were sometimes trimmed. In the Tuamotus the shaping is often a crude attempt to express the human form. On Necker Island the small stone images of the gods rested against the slabs set on the platform. Between a carved upright and a statue, transition is logical, and it seems to have taken place on Easter Island. The development of the slabs into statues was facilitated by some knowledge of carving which the Easter Islanders already possessed when they settled on their isolated island. On some Easter Island ahus, pillars take the place of statues. At Mataveri such a pillar has one surface carved like the back of a statue.

174 532 The first immigrants to Easter Island probably came from eastern Polynesia and were acquainted with the carving of human figures from wood. Lacking wood in their new home, they applied their skill to the Rano-raraku tuff which is more easily worked than stone. Stimulated by the abundance of tuff and the ease with which statues could be transported across the open country, they created larger and larger statues until stone carving reached there a development greater than in any other part of Polynesia.

RELIGION

177 771 Easter Island religion was more deeply affected by the several catastrophes which befell the people than any other phase of their culture. Roussel (190, p. 424) says that the downfall of the religion took place long before the arrival of the missionaries and that "there remained only a few tapus of which they made little ado" (190, p. 495). Zumbohm (230, vol. 6, p. 128), in 1866, found no ceremony or religious cult in honor of any deity; the pre-missionary decadence of religious beliefs facilitated conversion to Christianity. Even the feasts had lost much of the ancient character, and had become "but

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except in connection with Makemake. The formula which accompanies an offering to Makemake always includes Haua who appears in the myth as the god's companion.

The third revelation of the myth is the connection between Makemake and the birds of the bird cult of Orongo. The numerous accounts of this cult do not designate which god was honored by all the ceremonies. The legend of Makemake suggests that the man who discovered the first *manu-tara* egg was perhaps an incarnation of Makemake. The rock carvings at the end of the village of Orongo show the man with a bird's head holding an egg in his hand. The islanders called these figures Makemake. The form of the beak on most of the image heads shows clearly that they did not represent the features of the tern (*manu-tara*) whose first eggs were so eagerly sought in the annual race at Orongo. The beak most often recalls that of the frigate (man-of-war) bird. If the rock carvings were representations of the bird-men it is to be supposed that the artists tried to figure the *manu-tara* which had a prominent place in Easter Island mythology.

Makemake is frequently regarded as a supreme justice which may have been suggested by Christian influence or by some mythical connection of the god with the hereafter or mansion of the souls. Thomson (215, p. 482) regards Makemake as "the great spirit of the sea." The fragments of tradition which were obtained by the missionaries allude to Makemake as creator of mankind, whom he made out of earth. I collected the following legend which confirms these statements:

> Makemake looked for a calabash filled with water. He masturbated in the water of the calabash. Red flesh sprouted out. It was no good. He tried again with a stone, he masturbated with a stone. It was no good. He tried with earth. He molded and masturbated with it. There was a bad odor. Then were born Tive, Raral, Hova, and the old woman, Arangi-kote-kote.

In this fragment of myth Makemake, as creator of mankind, plays the part assumed by Tane or Tiki in the mythology of central and marginal Polynesia. The theme of the multiple copulation of Makemake is paralleled by the various matings of Tane in New Zealand and Tiki in Mangareva and the Tuamotus. In the Maori mythology Tane begat by Hine-ahu-one, his wife, the eggs of a bird from which have sprung all the birds of the air. As Makemake also produces birds, I shall consider Makemake the local Easter Island name for the old god Tane.

Makemake and Hina-kauhara, the first woman born from Tiki (p. 315) and Hina-popoia (Hina-the-heaped-up), are mentioned together in an obscure and garbled myth, which was told to me as a story concerning Makemake. Hina-kauhara or Hina, undoubtedly a woman, becomes a man who wants to be mistaken for Makemake. The short chant in the legend is per-

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539 If the end of the chant were not so garbled, it might give a hint as to its practical
773 value and the circumstances in which it was recited. The last verse stresses the im-
776 portance of the yam (*uhi*) and sweet potato (*kumara*), which were the staple foods of the island.

PRIESTS

793 Our knowledge of the nature and organization of the priesthood is so slight and so confused that no clear distinction may be made between the high priests and the ordinary magicians or sorcerers. It is not possible to ascertain whether the ancient priesthood was always loosely organized or whether the original institutions were forgotten after the Peruvian raid of 1862 which crushed the native civilization of the island.

Undoubtedly the gods were attended by priests, although Geiseler (87, p. 33) and Routledge (194, p. 239) declare there were no priests, and Thomson (215, p. 470) affirms that native priests were simply wizards and sorcerers. However, Roussel (190, p. 360), our best authority on Easter Island, says: "There were priests and priestesses. Their functions were reduced to very few things: to preside at the rejoicings on the occasion of the birth of a child and to drive away the bad spirits of a sick man." Priests also composed and recited chants in honor of the dead. Such limited activity does not tally with the exalted social position of the priests; according to Roussel they were next in rank after the king.

793 We have already seen (p. 312) that Makemake manifested his will through
787 male and female priests. These servants of the gods were inspired by the deity who entered their bodies and spoke through their mouths. The offerings
782 of chickens, fish, and sweet potatoes were received by these priests, who also demanded human sacrifices. This information, although scant, shows that on Easter Island the power and duties of the priests did not differ very much from the general Polynesian pattern.

793 My informants and those of Routledge always attributed the performance of the religious and magic rites to the *ariki-paka*, who were noblemen of the Miru tribe (p. 129). While it is very likely that the chief priests were recruited from the royal or aristocratic families, it is doubtful that all the *ariki-paka* were fit for these functions.

171 The close association between nobility and priesthood is a common feature
793 in Polynesian culture, many instances of which have been recorded on other islands. The tapus surrounding the *ariki* were, in many respects, analogous to those of the priests. The sacredness of kingship and nobility linked the *ariki* very closely with ceremonial life. A hint of the priestly nature of certain *ariki* functions is to be found in a statement made by Geiseler (87, p. 33) on the authority of Salmon: "In early days when the kings enjoyed important power and respect, they functioned as priests and they started and they led the religious festivities."

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The term *ivi-atua* (lineage of the gods) is interpreted by the present population as magician or sorcerer, and they use the same word for a charm or a spell. The *koromaki* (the one who violently desires something) were also in the category of priests. Usually the word *koromaki* was followed by the mention of the thing wanted, as rain, fish, and so on. These *koromaki* were expert in casting spells and had the power to kill enemies or to benefit people who resorted to them. Apparently their function was similar to that of the *ivi-atua*. Here again is manifest the tendency to represent all the ancient priests as wizards.

In Mangareva the general term for priest is *taura*; Laval gives it as *tahura*. The name *tahura* on Easter Island is applied to the servants of the king, but as *tahura* may also mean "expert", the fact that the king's attendants were *tahura* does not imply that they were priests.

Divine Possession

It is evident from the allusions of the missionaries that in Easter Island, as in all of Polynesia, the gods were supposed to take possession of the priests and to use them as mediums between themselves and the people. The present natives remember that when a priest was possessed by a god, he spoke in a shrill, high-pitched voice. In the legend of the young men who pretended to be Makemake, it is said that " . . . they made their voice like that of a god (*hakaatua i te reo*)." The word used in Easter Island, as in most of Polynesia, to mean possession by a god was the verb *uru* (to penetrate, to enter). To express the action of the priest Uru-a-rei, who tried to exterminate the Miru by means of religious rites, my informant used the word *uru* and translated it "to make sorcery." The story tells that the priest was dizzy because he turned round and round (*miniro*) in order to make his *uru*.

Sorcerers

Sorcery seems to have been practiced on Easter Island to much the same extent and in much the same manner as on other Polynesian islands. Inspirational priests (*ivi-atua*) or sorcerers (*tangata taku*) had at their service familiar spirits through whom they cured or killed people or accomplished difficult tasks (p. 319). There were numerous charms connected with every action. There was even a spell to make people hurry.

A person who wanted to get rid of an enemy called in a sorcerer, to whom he presented food cooked especially for the purpose. The magician dug a hole in the ground and in it he buried a white cock with head turned down. The place was trodden upon, and after a few days the cock's death was followed by that of the person against whom the magic rite was directed. Such procedure was known as *taku mo mate* (charm for death). This typical prac-

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who reigned without taking part in the civilian government. Such an explanation would be quite natural if there were in Polynesia any other example of an institution of this kind, but in no Polynesian community is there the slightest hint of such a custom.

One should keep in mind that the feast was in honor of Makemake and Haua, the first being a bird-god. He probably derived this attribute from Tane with whom he has some characteristics in common. Images of a being with a bird head and a human body, sometimes holding an egg in his hand, are representations of the god Makemake. It follows that the bird-man was an incarnation of the god. Probably, according to the Polynesian way of thinking, he was the receptacle of the god. The race would thus have no other purpose than to give Makemake an opportunity to designate the man into whose body he wished to enter. I suppose that the bird-man, because of his highly sacred character, was authorized to plunder and to avail himself of the goods of other natives. His seclusion may well have been a result of the strong tapu attached to him as a consequence of his contact with the god. Even explained in terms of Polynesian culture, the institution of the bird-man recalls that of the temporary kings, principally those of Siam. Possibly the evolution of culture traits has created a cultural complex superficially akin to others, probably having an entirely different basis.

Comparisons with Other Polynesian Cults

The complex of the bird cult as it is reconstructed from second-hand information has no parallel in the rest of Polynesia. Of course, incarnation of gods in animals is a fundamental character of Polynesian religions, but nowhere else were there open competitions resulting in the election of a sacred man. Figures of a man with a bird's head occur elsewhere only on the island of Lanai in the Hawaiian group. There Emory found petroglyphs representing a man with a bird head, and suggests (75, p. 120) that it is not by chance that the bank on which these petroglyphs are carved is called Kaneapua, the name of a bird-man, and that a heiau near the bank bears the name Halulu, a mythical bird. The common motif of Maori art called *manaia* has been described as a fantastic being with a bird head. Actually it is probably a derivative of the traditional representation of the human figure.

TREATMENT OF DISEASE

Disease was treated by priests (*ivi-atua*) and was probably connected with religion as in Mangareva. Eyraud (81, vol. 38, p. 70) says that the natives merely removed the sick from their huts during the day and returned them at night. My inquiries contradict Eyraud's hasty statement; it is likely that magic beliefs and scientific conceptions were closely intermingled with practical treatments.

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535 Knoche (123, p. 202) refers to another dance, the principle of which was hopping:

> The lower end of the *ua* (ceremonial staff) rested between the big toe, and the second toe of the left foot, and the superior part of the staff under the carved head was seized with the left hand and maintained apart from the body. The *ua* was moved rhythmically here and there. The younger men and the boys with miniature *ua*, hopped round the periphery on their right feet, while the left foot hung waving in the air.

[170] In the Marquesas the natives also performed a dance jumping on one foot (104, p. 306).

Thomson's description (215, pp. 468-469) of the poised and complicated posture dance, although not precise, is the only complete document on the refined and elaborate dances of the natives of old:

> The music was furnished by three persons seated upon the floor, who accompanied their discordant voices by thumps upon a tomtom improvised from old cracker boxes, and the dance was performed by an old woman and a young girl, the latter possessing some claim to symmetry of figure. The dancers wore a single loose garment, short enough to expose the bare ankles and sunbrowned feet. Over the head and shoulders was thrown a white cloak, composed of a few yards of cotton cloth, which was sometimes spread open and occasionally made to hide the whole figure as they went through the various evolutions of the dance. This mantle was not managed with any particular skill or grace and seemed to be identified with one particular dance, after which it was discarded for the small dancing-paddle or wand. The weird songs related the achievements and exploits of their ancestors in war, fishing, and love, and the gestures of the dancers were upon this occasion perfectly proper and modest. Some of the movements were suggestive of a rude relationship to the dances performed by the geisha girls of Japan in their odori, and consisted of movements and attitudes calculated to display the elegance and grace of the performers. The peculiar feature of the native dancing is the absence of violent motion; there is no jumping or elaborate pirouettes, no extravagant contortions, and nothing that might be called a precision of step. The lower limbs play a part of secondary importance to the arms and the dancers indulge in no dizzy girations. The feet and hands are kept moving in unison with the slow, monotonous music, while the dancers endeavor to act out the words of the song by pantomime. These islanders, like their sisters throughout Polynesia, have their hula-hula, or dances that partake of passion and abandon, and portray the old story of coquetry, jealousy, and ultimate surrender of the maiden. Soft swaying movements, a gentle turning away, timid glances, and startled gestures, gradually giving place to more rapturous passion, speak plainly enough the theme of the song, though the movements are less graceful and elegant than those which characterize the nautch dances of India. Among the diversified dances, some are performed by men and others by women, but the sexes rarely if ever dance together. Wands are usually held in each hand, but occasionally one and sometimes both are discarded. Feather hats and other ornaments are worn in portraying characters and some of the dances are said to be of obscene tendencies.

Knoche (123, p. 202) mentions briefly a dance he saw in 1912: "Very like the Katenga, but far more monotonous and entirely decent is a dance that the women performed grouped in an inner circle. They make silent movements with the hips and the men who stood in front did not move, but continually stamped on the ground." This dance suggests the modern *hura* or Tahitian dance which is performed by couples.

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rongorongo men were arranged in rows, with an alley-way down the center to the Ariki. Some of them had brought with them one tablet only; others as many as four. The old ones read in turn, or sometimes two together, from the places where they stood, but their tablets were not inspected. Te Haha and his comrades stood on the outskirts, and he and one other lad held *maru* in their hands. If a young man failed, he was called up and his errors pointed out; but if an old man did not read well, Nga-ara would beckon to Te Haha, who would go up to the man and take him out by the ear. Our informant repeated this part of the story identically months later, and added that the Ariki would say to the culprit, "Are you not ashamed to be taken out by a child?" the offender's hat was taken away, but the tablet was not inspected.

The entire morning was spent in hearing one half of the men read; there was an interval at midday for a meal, after which the remainder recited, the whole performance lasting till evening. Fights occasionally ensued from people scoffing at those who failed. Nga-ara would then call Te Haha's attention to it, and the boy would go up to the offenders with the *maru* in his hand and look at them, when they would stop and there would be no more noise. When the function was over, the Ariki stood on a platform borne by eight men and addressed the *rongorongo* men on their duties, and doing well, and gave them each a chicken. Another old man, Jotefa, gave a different account of the great assembly, by which the Ariki sat on his stoop and the old men stood before him and prayed; according to this version they either did not bring their tablets or their doing so was voluntary. In addition to the great day, there were minor assemblies at new moon, or the last quarter of the moon, when the *rongorongo* men came to Anakena. The Ariki walked up and down reading the tablets, while the old men stood in a body and looked on.

In conformance with his supervisory duties Nga-ara is said to have traveled round the island and to have stayed for some while with the experts in each district. Routledge (194, p. 246) heard of a man of the south coast who was considered to be "too big a man to have a school." He also went about visiting and inspecting schools.

Tradition states that when Nga-ara died his body was carried to the ahu on three tablets, followed by the *rongorongo* men. The tablets were buried with him.

The *tangata rongorongo* of Easter Island are better understood when compared with those of the Marquesas and of Mangareva. In the Marquesas the *tuhuna o'ono* was "master chanter, tribal bard, or ceremonial priest, who presided in all important ritual, and served as repository and teacher of sacred and traditional lore" (104, p. 145). He was also the teacher of sacred chants and director of chanting at family feasts. The word *o'ono* is the equivalent of *rongo* since in the Marquesan dialect the *r* is dropped and the nasal velar (*ng*) becomes *n*. In the Marquesas there were tests of the *tuhuna o'ono* by other members of the same profession and contests between *tuhuna o'ono* of different tribes (104, p. 229). Any *tuhuna* who was judged in error by a majority of the masters gathered was immediately deprived of his title and could never lay claim to it again.

On Mangareva also there was a class of chanters or "intellectuals" who were termed *rongorongo* (*taura rongorongo*). They were not priests, properly speaking, but were responsible for the sacred chants for important

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171 533 festivals. They also attended feasts organized by the king or by chiefs to recite genealogies and chants in praise of nobility. They knew and transmitted to their pupils both sacred and profane lore (28, pp. 304-305).

In the Tuamotus the word *rongo* is applied to formal chants about the exploits or feats of a hero, recited by the *tahunga one*. *Rongo* is also the name of a "mourning chant for a deceased hero."

Reciters and chanters are familiar elements in the general pattern of Polynesian culture, but it is significant that it is only in the eastern part of Polynesia that we find the word *rongorongo* associated with a special class of bards.

171 212 533 The tablets of the Easter Island *rongorongo* were often sticks covered with symbols. In this connection it is important to mention that the *rongorongo* of Mangareva beat the measure with staffs (*kohau*) when chanting. In the Marquesas the ceremonial symbol of the *tuhuna o'ono* was a bundle of three *fau* stakes wrapped in cloth (104, p. 230). Maori orators always held clubs (*taiaha*) in their hands, without which they could not deliver a speech.

TABLETS

114 212 The wooden tablets, covered with rows of small figures, are a puzzle to science and constitute the most complicated problem of Easter Island culture. Though many hypotheses have been, or may be, presented to explain their significance, it is probable that the mystery will never be solved, for data are few.

[322] The so-called hieroglyphs or glyphs of the Easter Island script were incised with shark teeth or sharp obsidian flakes on boards, on sticks, and sometimes on wooden images or ornaments. In the Easter Island collection of Bishop Museum there are small obsidian points which may well have been used for this purpose.

Twenty tablets or fragments of tablets, scattered throughout institutions of the world, have been preserved and a corpus of all the known tablets is being prepared by Dr. Alan S. C. Ross.

The most important collection of all Easter Island tablets is preserved in the Museum de la Congrégation des Sacrés Coeurs de Picpus in Braine-le-Comte (Belgium). The four tablets kept there were collected by the first missionaries to Easter Island and were given to Bishop Tepano Jaussen of Tahiti. The largest one, called Tahua or the "Oar" is 90 cm. long and 14 cm. wide and has 1,547 signs. Another, called Aruku-kurenga, is 41 cm. long and 15.5 cm. wide. A third, called Mamari, is 21 cm. by 30 cm. In the Museum für Völkerkunde, Vienna, there are two tablets, only one of which is authentic. The other, 25.5 cm. long and 5.2 cm. wide, is probably a fake. (See 97, p. 101, fig. 1, pl. 10.) The little tablet in the British Museum, 21 cm. long and 7.3 cm. wide (58), is not ancient. The tablet made of apple-tree wood in the Lateran Museum, Rome (6442), is a crude fake. Two tablets in the Museum of Santiago de Chile were taken by the *O'Higgins* in 1870; one of these is 35 cm. long and 12 cm. wide, the other is 45 cm. long and 11.5 cm. wide. Two tablets purchased by Thomson in 1886 are in the National Museum, Washington. One tablet is preserved in the Museum für Völkerkunde, Berlin. There are two tablets in the Museum of the Academy of Sciences in Leningrad. One of these,

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The figure most frequently repeated on the tablet is that of the tern (*manu-tara*). In the tablet Aruku-kurenga it appears 149 times, including both naturalistic and conventionalized representations of the bird and innumerable variants of the bird-man motif, in which the head of the *manu-tara* surmounts a more or less human body. Logically the *manu-tara* symbol includes the design of the bird-man in a sitting posture (fig. 57, *a*), but, as the outline of this figure is constant throughout the tablet, it may be regarded as an independent symbol. The above symbol occurs 34 times on the tablet Aruku-kurenga which brings the total number of bird-men to 183. In other words, a fifth of the tablet is covered with this one symbol, which is that of the most important god of Easter Island.

The second most common sign is that of a man whose head is conventionalized in the shape of a lozenge. It is repeated 94 times on the Aruku-kurenga tablet. The same head, attached to the body of a turtle, has been figured 7 times. The outline of a frigate bird has been carved 32 times. That of another bird with a long beak, a species of pelican, 10 times. I counted 20 fish among the symbols.

Bird-men and human personages constitute about a third of the total number of signs. There is no evidence that these personages have special significance each time they appear. This leaves about 600 signs, including 90 different symbols. There remains a narrow range of repetition for each symbol. Of the more or less geometrical symbols, the most frequent is the representation of the feather streamer (*maro*) which occurs 41 times and is generally connected with one of the two contiguous symbols. There are 20 different symbols which occur only once.

The tablet called the Oar has about 1,500 signs. On it the *manu-tara* or the personage with a *manu-tara* head is repeated 142 times, the frigate bird 80, and the pelican 41 times. Birds represent a little less than a fifth of the total number of signs. One row of the Oar tablet, in which there are 80 signs, repeats the frigate bird 17 times and the *manu-tara* 15 times. Thus, more than a third of the tablet is composed of two bird signs. These bird signs are not grouped, and cannot be considered as a part of identical words.

If this script were phonetic or syllabic there would be constant repetitions of groups. But the number of different signs is too large and the repetitions of sequences are too rare for such a system.

The Easter Island script may be a form of pictography. It has all the requisites for picture-writing—naturalistic representations intermingled with geometrical signs suggestive of conventionalized symbols. An evolved form of pictography for the recording of chants would be possible in the general pattern of Polynesian chants, dealing with fish, birds, men, etc. Concrete ideas would lend themselves readily to graphic representation. It seems logical to suppose that the tablets were mnemonic devices for recording chants which were also memorized. The Cuna Indians of Panama and the Ojibwa of North America invented similar methods of writing. The Ojibwa memorize their chants but reproduce them on birch bark by means of signs which somewhat resemble those of Easter Island. Around each word cluster a group of words which form a stanza. Attempts to read the Easter Island tablets with the help of natives have indicated that each sign corresponds to a number of words. If the Easter Island tablets are pictographies, it is curious that the symbols are so highly conventionalized and that their number seems to be more or less fixed.

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This is what Routledge's informant meant when he said that "the words were new, but the letters were old." The magical or ornamental character of the signs superseded their pictographic value. If the symbols were originally carved on a wooden stick the boustrophedon character of the "writing" would be easily understood. 212

Similarly, among the Ojibwa and the Cuna Indians the symbols are used specifically to increase the sacredness and the power of the words. That certain of the Easter Island signs had magic value is evidenced by their use on sacred skulls and on rocks in a sacred place. There must be a psychological link between representations of symbols on wooden tablets and on the other objects.

I am perfectly aware of the hypothetical character of my theory, but this hypothesis will serve until it is demonstrated that the ordinance of the signs on the tablets corresponds to a real system.

COMPARISONS WITH OTHER POLYNESIAN MNEMONIC DEVICES

The main difficulty in solving the problem of the tablets lies in the lack of any convincing parallel in Polynesia. The Maori had notched staves (*whaka-papa-rakai*) that were displayed when reciting genealogies, each notch corresponding to an ancestor. However, these staves were not mnemonic devices but merely accessories that materialized the long series of ancestors to the eyes of the audience. 171 ● 212

The closest parallels to the Easter Island tablets are the mnemonic devices of the Marquesans which consist of a cylindrical bundle woven of coconut fiber with knotted cords hanging from it. The bundle is often shaped like a human figure and is supposed to contain the story of the gods. Some bundles represent genealogies, each knot corresponding to a man or a woman. Others were used in connection with chants and tales. The bundles were sacred objects belonging to the priests. They were given to children at a feast where they recited chants and genealogies. Without the bundles, the genealogical lists had no value. (For a further discussion of Marquesan mnemonic devices, see Von den Steinen, Die Marquesaner und ihre Kunst, Bd. 2, Berlin, 1928.)

There is a remote possibility that chants were also represented by knots in the Cook Islands. In the Tuamotus and the Society Islands chants were embodied in material objects: sticks, plaited pandanus, or coconut leaves. After each chant, the priest deposited on the marae the object that represented the chant.

These examples show that in other islands mnemonic devices developed into sacred accessories associated with chanting that had only a remote link with their original function.

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174 father to son as elsewhere in eastern Polynesia. The natives were vegetarian only by force of circumstances. Other than fowls and rats they had no meat. Even fishing was not very productive, as the island is not surrounded by coral reefs. As to the other traits typical of the "Frei-mutterrechtlichen Kulturkreise", they are common to all Polynesians. According to Schmidt and Koppers they all belong to the "Frei-Vaterrechtliche Kulturkreis."

All the dissention comes from the postulate that the Easter Island culture is fundamentally different from other Polynesian cultures and that two races, one of which was Melanesian, must have contributed to its building.

Several authors have attempted to show parallels between Easter Island culture and the civilization of the South American Indians (161). These parallels are so fanciful or naive that I do not think it worthwhile to discuss them here. A word must be said, however, about the supposed discovery of two Easter Island spear heads in an Indian grave in Chile (3). The two specimens are no doubt from Easter Island but the circumstances of their discovery are so obscure that they cannot be taken as evidence of early intercourse between Chile and Easter Island. For sixty years Chile has been flooded with artifacts brought from Easter Island by the crew of the *Baquedano.*

Now that we have established the fact that Easter Island was occupied by a single wave of immigrants belonging to the Polynesian race, another problem faces us: where did these Polynesians come from and when did they settle on the island? The best we may hope for is to link Easter Island with some Polynesian culture area. Local cultures throughout Polynesia show a basic similarity, but they have developed peculiarities which give them a more or less distinctive pattern.

All the essential features which characterize Polynesia as a whole are found on Easter Island. As appears natural from its geographical position, Easter Island is associated most closely with southeastern Polynesia and New Zealand. None of the distinctive culture traits of western Polynesia, listed by Burrows, was recorded on Easter Island. On the other hand, a great number of the features proper to central and marginal Polynesia formed part of its culture. These are: bark-cloth retting, direct outrigger attachment, carved human figures, Rongo as primal god, procreative myth of the origin of mankind, and nights of the moon. To this list established by Burrows could be added, the stone platform or ahu, widespread in marginal Polynesia though lacking in New Zealand.

174 171 There is no doubt that Easter Island belongs to the marginal sub-area of central Polynesia culture. But in attempting to link Easter Island culture with a specific group of islands within this area we are faced with a considerable

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difficulty. No specific region of central or marginal Polynesia shows a marked and distinctive resemblance to Easter Island.

With New Zealand, Easter Island has in common: the short-handled club (*patu-paiu*); the long, narrow-bladed club (*taiaha*); adzes of Easter Island type 2; the horizontal method of thatching; bone needles; simple bone hooks, composite hooks; *hakari* stages for accumulating food; *tu-ahu* isolated and separate from the marae; the use of the word *koro* as term of address for father.

The Tuamotuan parallels are: plan and general aspect of the hut; plank canoes with bow-shaped strut; stone platform in the marae; feather headdress; creation myth of man; Rongo and Tangaroa as ancestors of the king; and dialect. According to Churchill (51) the Easter Island language is nearer to the Tuamotuan than to any other Polynesian dialect.

Analogies with Mangareva are particularly numerous: pavement in front of the houses; plank canoe with raised ends; general type of paddle; some features of the wooden images; confinement of chiefly children; full tattooing of the body; use of the word *iti-atua* for priest and of *kurumaru* for commoner; type of the sacred structures; burial vaults in the marae; exposure of the corpses on a scaffold; *rongorongo* (professional chanters) association.

Marquesan parallels are: fowls; tapa images; big stone statues on platforms; carving of high relief figures; cutting of stones; long, narrow-bladed staves; perforation of the ears; full tattooing of the body; conventionalized figures with big eyes; *rongorongo* association.

Hawaiian parallels are: horizontal method of thatching; composite hooks; stone mortars; stone platform or *ku-ahu* of the heiaus; stone platforms of Necker Island.

Between Rapa and Easter Island there is no specific parallel, though Rapa is considered by many as the home country of the Easter Islanders. This view is an illusion created by the modern name of Easter Island, Rapa-nui (The-big-Rapa).

The hypothesis of a Mangarevan migration to Easter Island presents two important inconsistencies. First, the Easter Islanders could not have obtained their fowls from Mangareva where there were none; and second, they did not apply the word marae to their sanctuaries. Fowls might have disappeared from Mangareva as pigs did in the seventeenth century, but this is not likely. On the other islands the introduced fowls multiplied even without man's care. The word marae is absent in the Easter Island vocabulary, where only the old term ahu is applied to the sacred stone structures. The fusion of the assembly court (marae) and the stone platform (ahu) into a single monument is a later Polynesian development that occurred in the central area. In the Marquesas we have both terms: ahu being widely used in the north and *mea'e* in the south, a geographical distribution suggesting influences from the Society Islands or the Tuamotus.

If, because of these two inconsistencies, we should discard Mangareva as the homeland of Easter Islanders, the Marquesas would be the only acceptable solution. The Easter Islanders could not have come from the Tuamotus, for all their cultivated plants indicate a high island as the only possible source of their culture.

The Marquesan culture as we know it is, no doubt, very different from that of Easter Island, but the traits which differentiate it are later local

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developments that distinguish the Marquesas from the rest of Polynesia. To pay attention only to the specialized forms of the Marquesan arts and crafts and to take for granted that from the very beginning the Marquesan culture was strongly individualized is a procedure as arbitrary as projecting into the past the present features of the Maori civilization.

It is true that the Easter Island house is entirely different from the Marquesan type, but the structure of the Easter Island house was conditioned by the lack of wood.

The Marquesan ahus or *mea'e* are widely different from the Easter Island ahus, but Emory thinks that there is nothing ruling out a basic similarity. The irregular Marquesan structures grew out of the primitive platform and court adjusted to steep valleys which did not favor the regular disposition of a platform and court. If the Mangarevans came from the Marquesas, they might have retained the primitive form of the stone sanctuary, a type that is closely connected with the Easter Island ahu. We do not know whether the Easter Islanders used to build a sacred house near their ahus. The famous *koro* houses may be connected with this category of houses.

The most striking resemblance between the ahus in the Marquesas and on Easter Island is their use as burial places and the presence of stone statues on the highest platform. There were no statues on the Mangarevan maraes. Of course the conventions of the Marquesan stone images are widely different from those of Easter Island, but we know that this style must be more or less recent in the Marquesas since it does not occur anywhere else.

The Marquesans like the Easter Islanders were completely tattooed, but the motifs had little in common. They were inspired by artistic patterns that developed independently in the two areas.

Easter Island and Marquesan arts have nothing in common except for the big-eyed representation of the human face that is practically identical in the Marquesan wood carvings and in the Easter Island petroglyphs.

The association in the Marquesas of chanting and some sort of mnemonic device (knotted string) bears a resemblance to the tablet system. Though the relation between the two traits is not striking, it may rest on the same fundamental idea.

If the Easter Islanders really came from the Marquesas we must assign an early date to this migration and put it in a period when the Marquesan culture was still undifferentiated and closely connected with that of the Mangarevans and the Maori. The clearly marked affinities between Mangarevan and Marquesan culture have been established by Dr. Buck on the basis of comparative studies. The Mangarevans and the Marquesans share not only a great many culture traits but a series of words for economic plants. These analogies between Mangarevan and Marquesan cultures are responsible for

4:Metraux E-5 (1934-1935) 1945
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172 532 764 flattened appearance. The eyebrows are well marked and overlap the elliptical cavities which represent the sockets of the eyes. The nose is long, the tip slightly upturned and the nostrils expanded. The thin lips are pursed with what seems a scornful expression. The arms, slightly flexed, cling to the bust with the hands joined over the abdomen, below which the figure is cut off.

172 532 The other sculptures on the island—the lonely images on the plain and those that guard the slope of the volcano Ranoraraku—have the same features except that there are no sockets for the eyes. This part of the face, as in some modernistic sculpture, is defined only by the ridge of the eyebrows and by the flat plane of the cheeks below. The lower part of these statues tapers to an enormous peg, which was sunk into the soil.

171 532 778 The function of the *ahu* images can be surmised from analogies with the rest of Polynesia. The old Marquesans, close relatives and perhaps forebears of the Easter Islanders, adorned their stone platforms with statues which represented their ancestors. Among all the natives of central and marginal Polynesia, there is the same tendency to give human form to ancestral gods presiding over the sacred places. In the sanctuaries of central Polynesia stood huge slabs that were erected in the same position as the Easter Island statues. These slabs were receptacles for the souls of the ancestral gods, who entered them when they were called by the priests. The Easter Island statues are merely a more realistic development of this idea, favored by the existence of easily carved tufa deposits. Their sculptors elaborated rather than originated a tradition.

172 532 Everywhere on the island statues are to be found: on top of volcanic hills, along cliffs, and in places which seem almost inaccessible. Their mass must have made their transportation difficult. As a matter of fact, no one has yet explained how some of them were hauled from the quarry and then erected on the platforms on the opposite side of the island.

483 [532] Of course, there are many other instances of people with rudimentary equipment moving objects of great size—for instance, the dolmens and menhirs of Europe. As the statues that the Easter Islanders erected on their sanctuaries were of the native tufa, they were not exceedingly heavy for their bulk. Their weight ranges from 5 to 8 tons; only one weighs as much as 20 tons. But because the rock from which they were carved is soft, it must have been necessary to take innumerable precautions not to mar or break them in transit. This would have been easy if abundant supplies of wood had been accessible, but, except for a few bushes, the island seems always to have lacked wood. Good material for making ropes was apparently also lacking. The only thing they could have been made from is paper

4:Metraux E-5 (1934-1935) 1945
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mulberry, which the natives grew in special stone-enclosed plots. Perhaps the wood necessary for making sledges on which the statues might have been hauled was lumber that floated ashore. This is frequently mentioned in ancient tales. If native timber or driftwood was available in the old days, the difficulties of transportation would not have been overwhelming. We know that other Polynesians transported objects quite as heavy as the Easter Island images. For instance in the Marquesas, slabs weighing as much as 10 tons were hauled along the slopes of the mountains. The famous doorway, or trilithon, of Tonga, which is one of the marvels of the world, has a lintel weighing 30 tons. But when the Easter Islanders of today are asked about the means by which the statues were transported, they only say: "King Tuu-ko-ihu, the great magician, used to move them with the words of his mouth."

Other questions have arisen about the Easter Island carvings. How, for instance, did the people get the manpower for such large enterprises, which would have been impossible, it seems, if the population were as small as it is today? The answer is that before the Europeans arrived, the island had ten times as many inhabitants as it now has—4 or 5 thousand would be a conservative estimate. We know this from data given by its first European visitors and the early missionaries.

Again, are these statues as old as has been said? Certain writers have dated them as far back as 1000 B. C. There are even some who think that they might have been in existence 10,000 years ago. But the weight of general evidence is against these views. Although their material is a relatively soft stone, they still retain sharp outlines, and the hammer marks are still noticeable on them. As the winds blow with relentless force over the island, and rains are both frequent and violent, if the carving had been done thousands of years ago, it could not be in such good condition as it is today. Tradition seems to indicate that the Polynesian ancestors of the present inhabitants came to the island and settled it in the twelfth and thirteenth centuries A. D. All things considered, I do not think the statues can be more than five or six centuries old. But no definite date can be set for them.

The figures of stone that stood so high above the shores of Easter Island, and in such striking formation that it is no wonder they amazed the old navigators, have attracted more attention than the other mysterious objects to which I have already referred—the wooden tablets with rows of strange signs incised on them. But these curious pieces of wood have also given rise to much speculation. They were bought from the natives by the missionaries in the early days of their work, and ever since they have been thought to contain a real script which, if it could be read, would prove a key to the island's mysteries.

The first white man to discover the tablets was Monseigneur Jaussen, French Bishop of Tahiti, in 1866. As he was looking at a piece of

4:Metraux E-5 (1934-1935) 1945
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who formed a society, which existed not only on Easter Island but also on other Polynesian islands. In childhood they were taught in special schools to memorize and to recite the lore of their tribe.

Everywhere in Polynesia the chanters use such an "orator staff." Sometimes, as in New Zealand, the staffs are provided with notches, which are supposed to help in reciting genealogical tables. In the Marquesas, the chanters held, while chanting, a bundle made of string wound about with knotted ends hanging down, which was thought of as containing the substance of the chant though the connection between the words and the contents of the bundle was loose. The bundles symbolized the chants and were in consequence of paramount importance. They were solemnly given to the young people after they had been initiated into the lore of their ancestors.

These facts, I concluded, give us the best clue in the problem of the Easter Island tablets. To its chanters as to the chanters of other islands, the "orator staffs" were the accessories and the symbols of their function. Originally, the designs on the staffs or tablets might have been mnemonic, but later on they lost their exact significance in the minds of the natives and were looked upon merely as simple ornaments or magic symbols. It may be added that even now we can observe on Easter Island a slight relation that has been preserved between design and chant. The natives are in the habit of chanting when they make string figures or cat's cradles. This interpretation of the tablets may not contain the whole truth about them. I offer it rather as the hypothesis which best fits the facts available today, and which harmonizes also with what we know of an underlying tendency in Polynesian civilization.

But these are not all the questions that have been raised by Easter Island. Some observers have found in the well-carved and well-fitted stones of its sanctuaries likenesses and relations to the ancient remains in Peru, and to account for them have said that there must have been intercourse between these two parts of the world at some period of history. But close study has revealed that between the Peruvian and the island ruins the resemblances do not go beyond the general fact of an exact fitting of the stones. The plan and the structure of the Peruvian buildings are entirely different. In Peru the walls are all of carved stone blocks, whereas in Easter Island they consist of slabs set on edge outside with rubble behind. The only conspicuous architectural achievement of the Easter Islanders was to select the slabs and to dress their corners so that no gap would appear on the surface and impair the general appearance. This they could naturally have learned to do without crossing the Pacific in frail canoes and making the long journey inland to the site of the wonderful ruins in Peru. Moreover, these are certainly far older than the Easter Island sanctuaries. Thus it seems clear that we must

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144 give up hope that the remains on Easter Island will help to solve the problems of early American civilizations.

174 The result of 3 years' work on the island culture pursued at the Bishop Museum in Honolulu, with which I have been associated,
173 shows that this Ultima Thule was discovered and settled by Polynesians, who arrived in a fleet of double canoes sometime, roughly, between the middle of the twelfth century A. D. and the end of the thirteenth. The time of the discovery and settlement can be established approximately from the lists of chiefs that have come to us. These the early missionaries took down from the dictation of the natives. I was permitted to copy another one from a list which my native informant had compiled himself. Many errors have, of course, slipped into these records, but a comparative study of them shows that Easter Island has been ruled by about 25 or 30 chiefs since the founder of the dynasty, Hotu-matua, and his people first came to its shores. Allowing 25 years for each ruler's reign—the usual method of measuring time in Polynesian annals—we find that this must have happened very close to the twelfth or thirteenth century. From other sources, we know also that this was a period of great sea expeditions, and that the settling of New Zealand and of many other islands in the Pacific occurred in what seems to have been a heroic age of ancient Polynesia.

173 Curiously enough, the oral tradition of the migration to Easter Island has been preserved remarkably well even down to the present. While I was there, I was told in great detail many more or less legendary incidents of the voyage eastward of Hotu-matua and his associate, the noble Tuuko-ihu. These stories with their core of history were the glorious sagas of the first emigrants to this little lost world.

174 At about the same time, the Tahitians, Maori, and Marquesans had a culture which was still undefined but was very similar in the different groups. In the course of the succeeding centuries, over each of these island areas a civilization developed along original lines, though still retaining the common background. The Easter Island culture belongs to this purely Polynesian type. The ancestors of the present population merely improved upon the legacy they received.

Where then did the Easter Islanders come from? Since they are Polynesians in race, language, and culture, the problem of their origin coincides with that of the Polynesians as a whole and is as yet unsolved. That the Polynesians came from Asia is beyond doubt. India, Assam, and Indo-China have been variously given as the cradle of these seafaring tribes, but sufficient evidence to validate these theories is still lacking. Within the Polynesian world the Easter Islanders offer
[171] many analogies with the Maori of New Zealand, the people of Mangareva and those of the Marquesas. Actually the resemblances between Easter Island culture and that of the Marquesas are very striking. It

9: Forster T-5 (1774) 1777
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the landing-place from the mountainous ſwell that tumbled in upon the ſhore. About a hundred, or a hundred and fifty natives were aſſembled on the ſpot where we landed, almoſt all of them naked, ſome having only a belt round the middle, from whence a ſmall bit of cloth, ſix or eight inches long, or a little net, hung down before. A very few of them had a cloak which reached to the knees, made of cloth, reſembling that of Taheitee in the texture, and ſtitched or quilted with thread to make it the more laſting. Moſt of theſe cloaks were painted yellow with the turmeric-root. The people did not make the leaſt unfriendly motion at our landing, but expreſſed a prodigious dread of our fire-arms, of which they ſeemed to know the deadly effects. We ſaw but few arms among them; ſome however had lances or ſpears, made of thin ill-ſhapen ſticks, and pointed with a ſharp triangular piece of a black glaſſy lava (*pumex vitreus*, Linn.) commonly called Iceland agate. One of them had a fighting club, made of a thick piece of wood about three feet long, carved at one extremity; and a few others had ſhort wooden clubs, exactly reſembling ſome of the New Zeeland patoo-patoos, which are made of bone. We obſerved ſome who had European hats and caps, chequered cotton handkerchiefs, and ragged jackets of blue woollen-cloth, which were ſo many indubitable teſtimonies of the viſit which the Spaniards had made to this iſland in 1770. The general appearance of the natives ſeemed to argue a great

1774. MARCH.

175 X [192] [386] 175 X 411 [171] ● 175 X

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1774. MARCH. beads, but they always threw them away with contempt, as far as ever they could. Whatever elſe they ſaw about us, they were deſirous of poſſeſſing, though they had nothing to give in return. Their number was now decreaſed nearly to one half, many of them having probably gone home to their dinners; however, the number of women was always remarkably ſmall in proportion to the men, there being not above twelve or fifteen at our firſt landing, and about ſix or ſeven when we embarked again. They were neither reſerved nor chaſte, and for the trifling conſideration of a ſmall piece of cloth, ſome of our ſailors obtained the gratification of their deſires. Their features were mild enough, and the large pointed cap gave them the air of profeſſed wantons.

We returned on board the ſhip before noon, and found it at anchor, though we had left it under ſail. The freſh fruits and roots which we brought on board, were immediately diſtributed as far as they would go, and proved a moſt ſeaſonable refreſhment to our ſick. We taſted the fowls, which ſeemed to have been dreſſed under-ground, by means of hot ſtones being wrapped up in green leaves, in the manner practiſed amongſt all the nations of the South Sea, whom we had hitherto viſited. The potatoes were of a gold-yellow colour, and as ſweet as carrots, therefore not equally palatable to us all; however they were extremely nouriſhing, and very antiſcorbutic. The juices of this,

9: Forster T-5 (1774) 1777
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1774. MARCH. parted with a quantity of provisions to us, of which the cultivation must have cost them great pains and labour. The barren refractory soil of their island, the scarcity of domestic animals, and the want of boats and proper materials for fishing, all concur to render their means of subsistence extremely difficult and precarious. Yet the desire of possessing the new toys and curiosities which strangers bring among them, hurried them away, and prevented their reflecting on the urgency of their own most natural and unavoidable wants. In this, as in numberless other circumstances, they agree with the tribes who inhabit New Zealand, the Friendly and the Society Islands, and who seem to have had one common origin with them. Their features are very similar, so that the general character may easily be distinguished. Their colour, a yellowish brown, most like the hue of the New Zealanders; their art of puncturing, the use of the mulberry-bark for clothing, the predilection for red paint and red dresses, the shape and workmanship of their clubs, the mode of dressing their victuals, all form a strong resemblance to the natives of the islands above mentioned. We may add to these, the simplicity of their languages, that of Easter Island being a dialect which, in many respects, resembles that of New Zealand, especially in the harshness of pronunciation and the use of gutturals, and yet, in other instances, partakes of that of Tahitee.

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9: Forster T-5 (1774) 1777
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of Taheitee. The monarchical government likewiſe ſtrengthens the affinity between the Eaſter Iſlanders and the tropical tribes, its prerogatives being only varied according to the different degrees of fertility of the iſlands, and the opulence or luxury of the people. Eaſter Iſland, or, as the natives call it, WAIHU, is ſo very barren, that the whole number of plants growing upon it does not exceed twenty ſpecies, of which far the greater part is cultivated*; though the ſpace which the plantations occupy is inconſiderable, compared with that which lies waſte. The ſoil is altogether ſtoney, and parched by the ſun, and water is ſo ſcarce, that the inhabitants drink it out of wells which have a ſtrong admixture of brine; nay, ſome of our people really ſaw them drink of the ſea-water when they were thirſty. Their habit of body muſt, in ſome meaſure, be influenced by theſe circumſtances; they are meagre, and their muſcles hard and rigid; they live very frugally, and, in general, go almoſt wholly naked, only covering the head, which is the moſt ſenſible of heat, with feathered caps, and puncturing or daubing the reſt with colours. Their ideas of decency are, of courſe, very different from thoſe of nations who are accuſtomed to clothing. They cut ſhort their hair and beards

* The Spaniards mention white calabaſhes, *(pompions,)* among the vegetable productions of this iſland; but we did not ſee any.—See Mr. Dalrymple's judicious letter to Dr. Hawkeſworth.

from

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board, talked a great deal of dancing, as ſoon as we had quieted his fears with reſpect to the ſafety of his perſon. The diſpoſition of theſe people is far from being warlike; their numbers are too inconſiderable, and their poverty too general, to create civil diſturbances amongſt them. It is equally improbable that they have foreign wars, ſince hitherto we know of no iſland near enough to admit of an intercourſe between the inhabitants; neither could we obtain any intelligence from thoſe of Eaſter Iſland upon the ſubject. This being premiſed, it is extraordinary that they ſhould have different kinds of offenſive weapons, and eſpecially ſuch as reſemble thoſe of the New Zeelanders; and we muſt add this circumſtance to ſeveral others, which are inexplicable to us in their kind.

Upon the whole, ſuppoſing Eaſter Iſland to have undergone a late misfortune from volcanic fires, its inhabitants are more to be pitied than any leſs civilized ſociety, being acquainted with a number of conveniencies, comforts, and luxuries of life, which they formerly poſſeſſed, and of which the remembrance muſt embitter the loſs. Mahine frequently lamented their unhappy ſituation, and ſeemed to feel for them more than he had done for the New Zeelanders, becauſe he found them much more deſtitute. He added another ſtick to the bundle which compoſed his journal, and remembered Eaſter Iſland with this obſervation, *tàta maïtaï, whennùa èeno*, that the people were good, but the iſland very bad;

10: Cooke D-5 (1886) 1899
OY2 Easter Islanders OY2

ations, was spoken of by them, and was attributed to walking barefoot over certain running vines usually growing among the rocks at the seaside. On reaching such places they seemed to avoid them, but nothing definite or reliable was elicited, and subsequent inquiries were overlooked in the hurry of departure.

VILLAGES AND HABITATIONS.

The villages on the island are three in number, Hanga-roa, near the bay of the same name, on the western side; Mataveri, within a mile of the former, and Vaihu, near Cape Hoe-Hoe, on the southerly coast of the island. Much the larger part of the population is gathered in the two villages first mentioned, between which the people are about equally distributed. At the first named is the church of the Catholic mission.

About a half mile south of Mataveri, near the base of Rana Kao, and separated from it by the most distinctive valley on the island, is the residence of Mr. Brander, the first erected and by far the largest, roomiest, and most convenient; modern-built, of wood, with lofty ceilings, and porches, and shade trees growing about it. It is, however, in a sad state of repair, and the evidences of neglect and thriftlessness are apparent everywhere.

Vaihu, which can no longer be called a village, is about 4½ miles to the eastward of Mataveri. It was at one time a Catholic mission, and the church and parsonage, still in a fair state of preservation, yet remain, together with a few outbuildings, all of which are occupied by Mr. Salmon and his employees, perhaps a dozen in all. Divine service, under the leadership of native "missionaries," is still held in one portion of the church, while the remainder is appropriated to other purposes, mainly for the storage of wool, obtained from the sheep, considerable quantities of which are shipped to Tahiti.

The habitations of the ancient image and platform builders, the stone huts on Rana Kao, will be described in other reports.

Until quite recently the house of the modern Rapa Nuiis were somewhat similar to those of the Fijians, being rectangular in shape, about 6 to 8 feet wide by 10 to 15 feet long, with nearly perpendicular sides, peak-roofed lengthwise, door on side, and thatched all over.

A few years since an Oregon lumber vessel was wrecked on the island and much of her cargo, which consisted of boards, scantling, etc., was brought ashore. Of these, under suitable instruction, the natives built themselves houses, and nearly all are now domiciled in comparatively modern style habitations and far more comfortably than formerly. These houses, which after all have a very forlorn look, are from 15 to 20 or more feet long by from 10 to 15 feet wide. The weatherboards are neatly fitted to the frame of scantling, and they are covered with a board roof. There are usually two doors hinged opposite each other on the long sides of the house, and a small window or two close by the entrances, and sometimes glazed, admit a feeble light when the doors are closed.

11: Lavachery A-5 (1934-1935) 1937
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stone, so easy to fashion is the stone of this island. This argument* can be used against those who put forward the alleged difficulty of carving igneous rock as a reason for attributing them to a race more skilled, more strong, and gifted with better implements than the Polynesians.

But to return to the first Polynesian colonists. Very probably the fauna and flora of Easter Island were extremely restricted. But following a custom common in all their migrations, they would have taken with them plants, seeds of the most useful vegetables, rats, and chickens. They colonized the island, and their first settlements were at Anakena on the north coast and at Akahanga on the south. They set about conserving rainwater, for Easter Island has no springs. At the same time they learned how to protect the crops against the continual winds. They were familiar with certain crafts which they hold in common with all Polynesians—the making of cloth from mulberry bark (tapa) and the working of wood and stone. The latter craft differs only from that found in the other Polynesian islands in respect of the size of the monuments. The abundance of easily carved stone was the sole predetermining cause of the Pascuans erecting on their island the largest statues found in the islands of Oceania.

The technical skill of the former inhabitants is seen also in the manufacture of implements and weapons of obsidian, and of fish-hooks of stone and bone. These last were made with human bone, for man was the only mammal available with bones large enough. The Pascuan writing on wood shows their skill and taste. There have been found a large number of rock paintings and engravings, the former magical, the latter merely trial pieces.

The Pascuan house, when it is above ground, shows many technical analogies with the Hawaiian house, which, like it, is roofed with tufts of grass set on a framework of boughs. Whenever possible, the Pascuans settled themselves in artificial caves or holes in the ground, which provided a less precarious shelter in war and against thieves. The fowl house was built on the same principles.

The Pascuans were tatooed, and on feast days they painted their bodies with appropriate emblems.

Ten family groups or clans divided up the island between them. The king belonged to the clan of Miru. His place of residence changed, and his role was indeterminate. Many taboos, notably in the matter of food, isolated him from Pascuan life. He did not engage in the wars which often broke out between the clans of the west and north and those of the east (Kotuu against Hotu Itl). He pre-

* Unfortunately, however, the mystery mongers are not as a rule open to reason. Mystery is their religion.—Translator.

11: Lavachery A-5 (1934-1935)1937
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643 174 [212] sided over the experts in *rongorongo*, the repository of ancient traditions, genealogies, etc. They used tablets (Kohau *rongorongo*) engraved with signs as an aid to memory. The signs of *rongorongo* were the object of organized teaching.

174 764 769 [915] The Pascuans practiced a form of double inhumation. The body was exposed on the *ahu* until the flesh dried up or turned to dust. The bones were then placed in the burial chambers. Sometimes the skull was preserved separately. There was a general fear of the spirits of the dead. Commemorative feasts were held in front of the tombs, where chickens were exchanged for a ritual purpose. The statues at the foot of Rano Raraku represent the dead. Several of them have tatoo marks which were still used during the historical period. Later, the images of the dead also were placed on the *ahus*.

174 776 [171] The Pascuans had a large number of gods, the chief of whom was Makó Makó. The same name appeared in other Polynesian mythologies. It would seem to be connected with the source of that which supplied the material needs of the Pascuans—cultivation and fishing. It was thus connected with the Marquesan Tiki, whose mask it resembled in almost every detail. Makó Makó is the creator of birds. One of the less obscure features of his cult is the indication, by means of birds, of a man [10] who probably represents the god, and who each spring gives place to another. Ritual feasts at which human flesh was eaten were a part of this cult, as well as also initiation ceremonies at puberty. [266]

195 199 The end of the old culture was hastened by the arrival of Europeans, who revealed a new world to the Pascuans, a world totally different from their own. From that time onward they lost without any effort both peace and the joy of life. Their restless spirit drove them to undertake the most savage warfare, which decimated them, ruined their culture and overthrew its monuments. Works of art were given up, traditions were lost, so that even the memory of their existence has perished. The whalers and slavers completed the task of destruction already well advanced. After being Christianized the Pascuans became ashamed of most of their past history, and essayed, not without success, to remove all traces of it from memory.

[10] Tangata Manu—bird man. He was the first to get possession of the first egg laid by the bird *Manutara* (breast) in the island of Motunui (spring equinox).

15:Routledge E-5 (1914-1915) 1919
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from sixty to five hundred. One of the voyagers goes so far as to say that "all the country was under cultivation." As for the inhabitants, they were, they tell us, of all shades of colour, yellow, white, and brown, and wore clothes made of a "field product," evidently tapa. They were "painted," which apparently signifies tattooed, and it was the habit to distend the lobes of their ears so that they hung to the shoulders, and large discs were worn in them. "When these Indians," wrote Roggeveen, "go about any job which might set their ear-plugs wagging, and bid fair to do them any hurt, they take them out and hitch the rim of the lobe up over the top of the ear, which gives them a quaint and laughable appearance."[1]

The natives were extraordinarily thievish, stealing the caps from the seamen's heads, while one actually climbed into the port-hole of the cabin and took the cloth off the table. These habits gave rise to an unfortunate incident, as when the visitors came on shore, a scuffle took place over the sanctity of property, and the natives began throwing stones, on which a petty official gave the order to fire, ten or twelve natives being killed. The occurrence, however, was duly explained, and did not terminate amicable relations. We learn that at this time the great statues, of which this is of course the first report, were then, as has already been noted, standing and in place. The Dutchmen describe them as "remarkable, tall, stone figures, a good 30 feet in height," and notice that they have crowns on their heads; a clear space was, they said, reserved round them by laying stones. They have no doubt that the figures are objects of worship; the natives "kindle fires in front of them, and thereafter squatting on their heels with heads bowed down, they bring the palms of their hands together and alternately raise and lower them." Another observer adds, in connection with this worship, that they "prostrated themselves towards the rising sun." A great step would have been gained towards the solution of the problem if we could feel assured that these last remarks were justified and were not merely the result of imperfect observation.[2]

[1] Precisely the same habit obtains to-day among the Akikuyu in East Africa.

[2] For Roggeveen's description of the Island see *Voyage of Gonsalez*. Hakluyt Society, Series II., vol. xiii., pp. 1 to 26.
A statement of the evidence re Davis Island is given in the introduction to the same volume.